

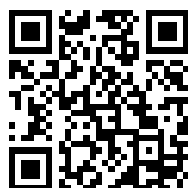


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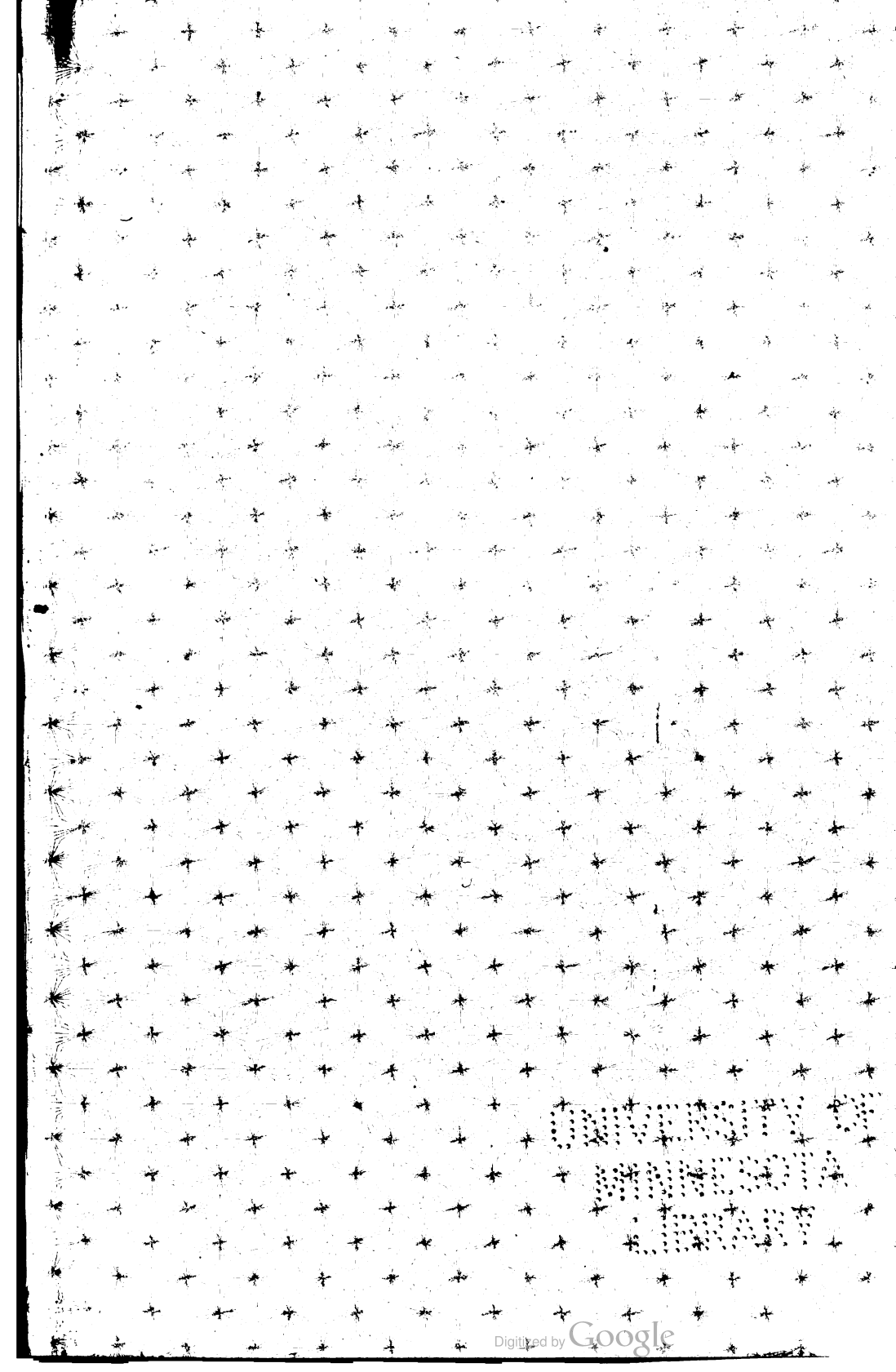


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# IDEAL POWER

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APRIL, 1913.

No. 1.

## Grinding Wheel Sparks

By R. G. WILLIAMS

Mechanical Division, Norton Research Laboratories

When certain kinds of metal, namely, iron and steels, are pressed against a rapidly revolving grinding wheel, sparks are produced. Sparks are pieces of metal which are torn away from the mass being ground, and during this tearing process are heated to such a high temperature that they become molten. In this highly heated condition they give out light, the amount of light produced being proportional to the temperature to which the metal is heated.

It is one of the natural laws of physics that when a liquid drops, or is thrown through the air, it takes a spherical form. Ordinary rain drops are an illustration of this fact. Consequently, we would expect the solidified sparks to be in the form of little solid globules. In a general way this is true, but not exactly. When these sparks first cool they do take on the form of globules, but as they get colder, the outside and solid shell contracts on the liquid-interior until a point is reached where the pressure of the liquid interior is great enough to rupture the outside shell, and the phenomena, which we refer to as spurting or forking, then takes place. All that is left is part of a hollow spherical shell.

As far back as 1804, a Frenchman made some spark experiments with an old-fashioned grindstone, but it was probably not until the introduction of high speed steel that grinding wheel sparks became of interest to the ordinary shop-man. It was noticed that high speed steel did not spurt in the same manner as ordinary carbon steel, and this led to the question of what it was that produced different kinds of sparks. It is common knowledge that the air contains oxygen, and it is the combination at high temperatures of oxygen in the air and the constituents of the metal being ground that produces spark characteristics peculiar to different metals. Carbon is the most influential constituent, the volume and brightness of sparks being roughly proportional to the amount of carbon present in the steel. In other words, a high carbon steel gives a large volume of sparks; a medium carbon steel gives a moderate volume; and a very low carbon steel, or wrought iron, gives a still smaller volume. High speed, or self-hardening steel, as it is sometimes called, is in a class by itself, and the characteristics peculiar to this

class of steels will be taken up later.

Chips is the name used for these sparks when they have become solidified, and by an examination of these chips through a magnifying glass it is possible to tell whether or not the wheel was cutting properly. A good many kinds of material, notably high carbon steel tools, require a very cool cutting wheel; that is, one which will generate very little heat during the grinding operation. This is necessary, for if the wheel generated considerable heat, there would be great danger of drawing the temper of the tool and its usefulness being destroyed. If, upon examining chips through a magnifying glass, we see a predominance of curls over globules, we say that the wheel is cutting properly and generating a very small amount of heat, but if the sample of chips shows a predominance of globules over curls, we then know that the wheel is generating more heat than it should.

Whether or not a wheel is cutting properly can also be judged by the volume of sparks produced during the grinding operation. If two wheels are working on the same kind of steel, and one wheel is only producing a small volume of sparks, while the other wheel is producing a large volume, it is an indication that the first wheel is not cutting satisfactorily. The most common cause of a wheel not cutting satisfactorily is being in a state which those initiated into grinding wheel language know as glazed. When the minute cutting particles of a wheel, which should stick out far enough to penetrate the material being held against the wheel, have worn down flat, have lost their sharpness, and no longer penetrate as they should, the wheel is then in a glazed condition.

The Brown & Sharpe Manufacturing Company have determined that sparks will show from a cylindrical piece of work when the depth of cut is only five-millionths of an inch. This will give you a good idea of why the volume of sparks is a correct indication of how the wheel is cutting. For instance, if due to improper supply of cooling liquid, or for

some other reason, a shaft being ground is expanding just a little more on one side than the other, which would cause the shaft to be out of round when finished, the volume of sparks produced will be greater from the side which is expanding than from the other side.

The cut shown is a reproduction of a chart used in Purdue University by John F. Keller, Instructor in Forging, to bring to the pupils' attention the spark characteristics of different irons and steels, as a means of roughly determining what kind of iron or steel they are working with.

Figure 1 gives an idea of the characteristics of sparks from wrought iron. Wrought iron is free from carbon and the sparks follow straight lines which become broader and more luminous until they grow dark. Wrought iron is easily distinguished from iron which contains carbon, that is, steel, in that there are practically no sparks which spurt or fork. The sparks from wrought iron present an analogy to meteors, or shooting stars. Meteors are masses of iron practically free from carbon which have been traveling about in space and come in contact with the air which surrounds the earth. They are traveling at an enormous rate of speed and sufficient friction is set up between the meteor and the air to heat the meteor to a temperature where the iron it contains combines with the oxygen in the air. In other words the iron burns and this burning produces light.

Figure 2 shows the sparks from mild steel. This contains a low percentage of carbon which is evidenced by the appearance of a few sparks which spurt, otherwise the sparks are similar to those from wrought iron.

Figure 3 represents the sparks from tool steel and it will be noticed that the number of sparks which spurt are greater than from mild steel. Also, the number of sparks characteristic of wrought iron have diminished. The color of the sparks has also changed from a light straw to nearly white.

Figure 4 gives an idea of the sparks from high carbon steel. The character-



## SPARK METHOD OF SELECTING IRON AND STEELS

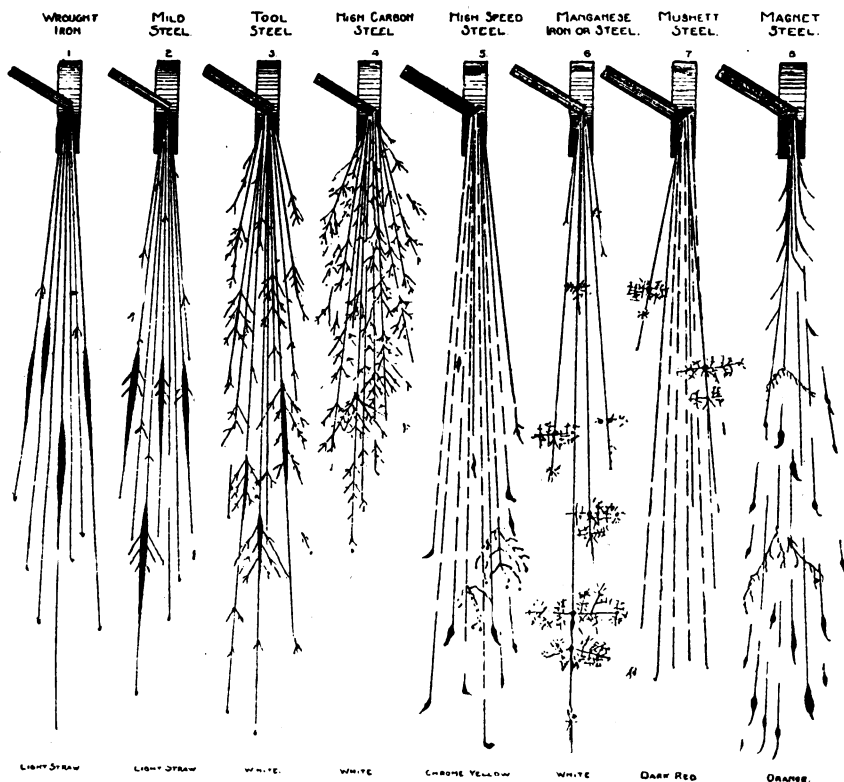


Chart Prepared by Jno. F. Keller to Show Spark Characteristics.  
Copyrighted, 1911, by Jno. F. Keller.

istic iron spark is no longer present and practically all the sparks spurt, a great many resputting a number of times. It will be noticed that the distance the sparks travel away from the grinding wheel has also diminished. In high carbon steels, the iron and carbon are in such form that they most readily combine with the oxygen in the air.

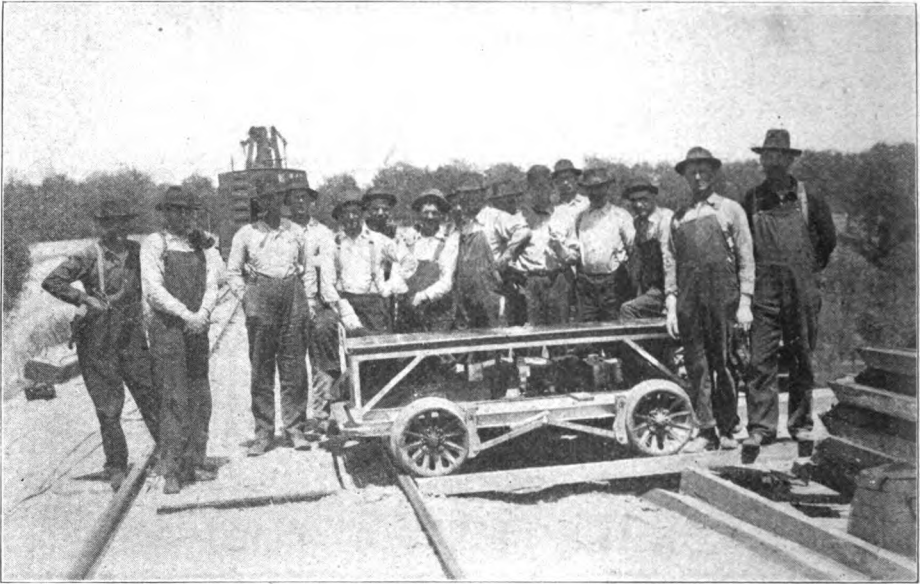
Figure 5 represents high speed steel sparks. Although high speed steels contain a fairly high percentage of carbon, the chromium and tungsten they usually contain, has the function of holding the carbon in such a state that the sparks characteristic of ordinary tool steel are entirely absent.

The sparks follow a straight line

similar to wrought iron sparks, but give very much less light and end abruptly in a chrome yellow, pear-shaped mass.

Figure 6 shows the sparks produced by a certain kind of manganese steel which contains very much less manganese than is present in the common manganese steel used in railroad frogs and switches. A characteristic of sparks from manganese steel is their intense brilliancy and white color.

Figure 7 shows the kind of sparks from the earlier grade of Mushett air hardening steel. These sparks are hardly luminous, being dark red in color, and although this steel contains about 2 per cent of carbon, it shows none of the characteristic sparks obtained from a



straight carbon steel containing the same amount of carbon.

Figure 8 represents sparks from a special brand of steel known as magnet steel. The color of these sparks is orange, the characteristics differing in the manner shown by the diagram.

These are not all the varieties of sparks capable of being produced from iron and steels, but should give the reader an idea of the most common varieties. The soft metals like brass, bronze and aluminum, do not give sparks, while cast iron gives a very short, dark red spark which ends in a spurt in all directions.

Practical use can be made of the spark test in a good many instances, notably by the tool maker who has to handle different kinds of steel. Should a carbon steel be given the heat treatment required by a high speed steel, it would be ruined; or should a high speed steel be given the heat treatment proper for an ordinary carbon steel, it would not work at the highest efficiency. By using as standards steels of known properties, one about which there is doubt can be readily correlated by means of a spark test.

#### Rockford Transportation for Contractors.

Through the courtesy of Mr. E. J. McGivena, superintendent of erection of the Bernheisel Construction Co. of Chicago, we are permitted to reproduce the above photo showing a No. 4 Rockford section car and its crew of sixteen men.

The car was originally purchased to carry eight men (the rated capacity of the car) from Carlinville, Ill., on the Chicago & Alton Railroad, to the site of a bridge on the Macoupin County Railway, a distance of  $9\frac{1}{2}$  miles. But before the contract was completed more men were employed. By spreading planks across the seats the additional force was accommodated, thus demonstrating the power of the car, as well as its value to contractors as a means of transportation. The distance of  $9\frac{1}{2}$  miles was covered in from 20 to 25 minutes. Camps for the accommodation of the men were dispensed with, which simplified the problem for the contractor.

Contractors generally are beginning to see the great advantage that may be derived from Rockford transportation.

### Air-Operated Hydraulic Drop Pit Jack.

The operation of removing the driving wheels from locomotives is accomplished in a great many different ways in the various railroad plants of the country, says M. J. Hayes, general foreman T. H. & B. Ry., Hamilton, Ont., in *Canadian Machinery*. In the majority of shops a traveling crane is used, which lifts the engine off the wheels and carries it to another pit, the wheels being then carried away to the wheel lathe. In others, an electric hoist is used which raises the engine up, the wheels being then rolled out and the engine let down again on blocks. In some shops with limited facilities jacks are still used, and the engine is jacked up first at one end, and then at the other, being blocked securely at each end in turn, until finally it is high enough to allow the wheels to be rolled out. This is a laborious and dangerous operation and takes considerable time and labor to accomplish.

The method in use, where the number of the engines handled does not justify the installation of a traveling crane, is the drop pit method. In such a shop,

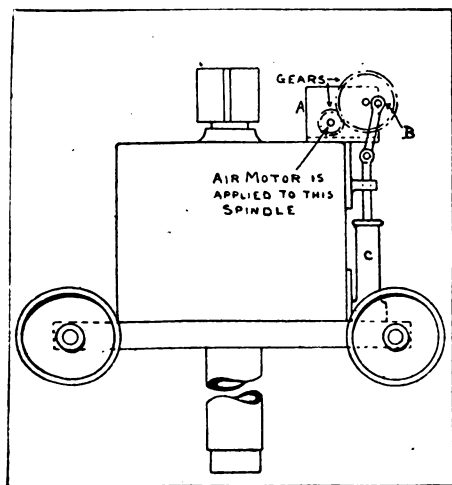


Fig. 1. Air Operated Hydraulic Drop Pit Jack.

the engines are moved over a pit with removable rails, and a jack, mounted on a carriage, runs along the pit bottom.

After removing the pedestal binders and taking the weight of the engine with jacks placed under the buffer beam and end rails, the pit jack is run up and takes the weight of the pair of wheels

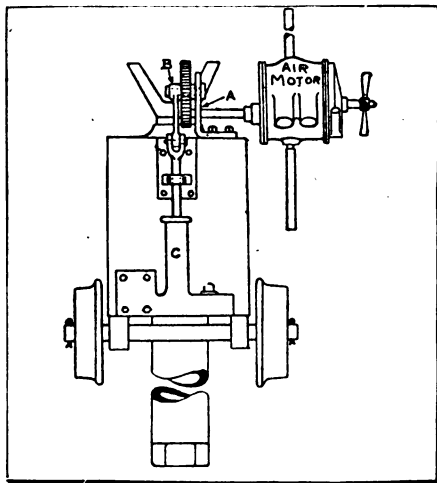


Fig. 2. Air Operated Hydraulic Drop Pit Jack.

off the rails which are then removed and the wheels lowered into the pit. The carriage and wheels are then moved clear of the engine, and the wheels jacked up level with the floor and run off to the wheel lathe or wheel press. The rails are then replaced, the locomotive is moved forward to bring the next pair of wheels over the jack and the operation repeated. In replacing the wheels the operation is of course reversed.

Different styles of jacks are used in such pits; some use the screw jack, which is very slow, while others use air jacks which are fast, but not always safe. The majority prefer the hydraulic jack, which, although not so fast as the air jack, is a great deal more dependable.

The accompanying sketches show how a hydraulic pit jack was changed at the shops of the T., H. & B. Ry. at Hamilton, Ont., and made nearly as fast as an air jack, while still retaining the safety of the hydraulic. Originally it took two men on the end of a 4-foot lever to raise a heavy pair of driving wheels into position under an engine.

and took just five times as long as it now takes a boy and a "Little Giant" air motor to do the same thing. As will be seen by the sketches, after taking off the hand lever, two gears with a ratio of four to one were fastened to the bracket (A), which was bolted to the top of the reservoir. In the larger of the two gears was inserted a crank pin (B), having a 2-inch throw. This was coupled up by a short connecting rod to the plunger of the pump. The small gear was keyed to a shaft, which extended throughout the bracket and had one end turned to a No. 3 standard Morse taper.

All that is necessary to do now, when the wheels are to be raised, is to apply the air motor and turn on the air, the wheels being lifted into place with a great saving of time and labor.

### The Speedograph.

The Speedograph is an autographic time, distance and speed recorder. It is substantially built throughout, the record and working parts being under lock and key, and invisible to the driver and every movement of the vehicle, whether in operation or idle, is recorded mechanically.



The Speedograph is a positive check on every movement of the vehicle at all times, and renders it not only possible to eliminate idle or waste time, but also creates a saving in the wear and tear on the truck, tires and engine through limiting the speed. This last feature is of

particular interest to truck manufacturers who, in many instances guarantee the life of a truck for time periods, provided the truck is not subjected to abuse. It is also a direct benefit to the truck owner by proving that the operation of his car at all times is in accordance with



the guarantee given by the manufacturers.

The Speedograph checks and shows time truck leaves garage or any given point, and time of return, time of every stop made and length of stop, total number of miles traveled, the speed and variations of speed during the trip. By comparison of record with route sheet, it will show where each stop was made.

Record is not affected by hot or cold weather, cannot freeze or dry up, blot or become indistinct.

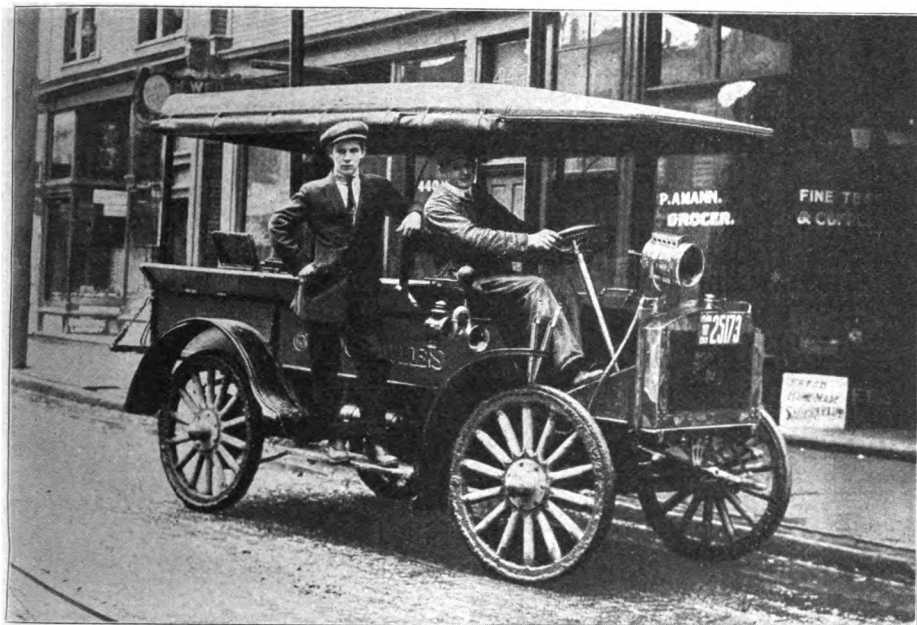
They may be obtained from the Chicago Pneumatic Tool Co., who will supply any additional information on request.

### Carried Too Far.

He had an invariable way of asking the wrong question or making the wrong comment. So it was, when at a dinner party his neighbor, a lady, said to him: "I am a thorough believer, you know, Mr. Smith, that men's clothes should match their hair; a black-haired man should wear black clothes, a brown-haired man should wear brown clothes. Don't you think so?"

"That may be," bungled Jones, "but suppose a man is bald?"





### 320 Days Without Losing a Day.

Peter Amann, shown in the above picture, is an enterprising grocer of Monessen, Pa., and is proud of his Little Giant truck. Three months after he purchased it he wrote the Lion Sales Agency, who represent the Little Giant in Monessen, as follows:

"Gentlemen: The Little Giant Truck which I purchased from you three months ago, I am pleased to say have used it every day since and never had a break.

I bought this car to take the place of three horses and it has more than filled my expectations. My running expenses, including gasoline and oil, have been averaging about \$15 per month, where three horses cost me \$75 per month. I certainly would be lost without it.

I want to thank you for the help you gave me and my man, teaching us to run the car and looking after the car since we have had it. When people wake up and realize the value of your truck you will be so busy that you can't furnish them fast enough."

In submitting the above photograph,

320 days after placing the car in service, he writes:

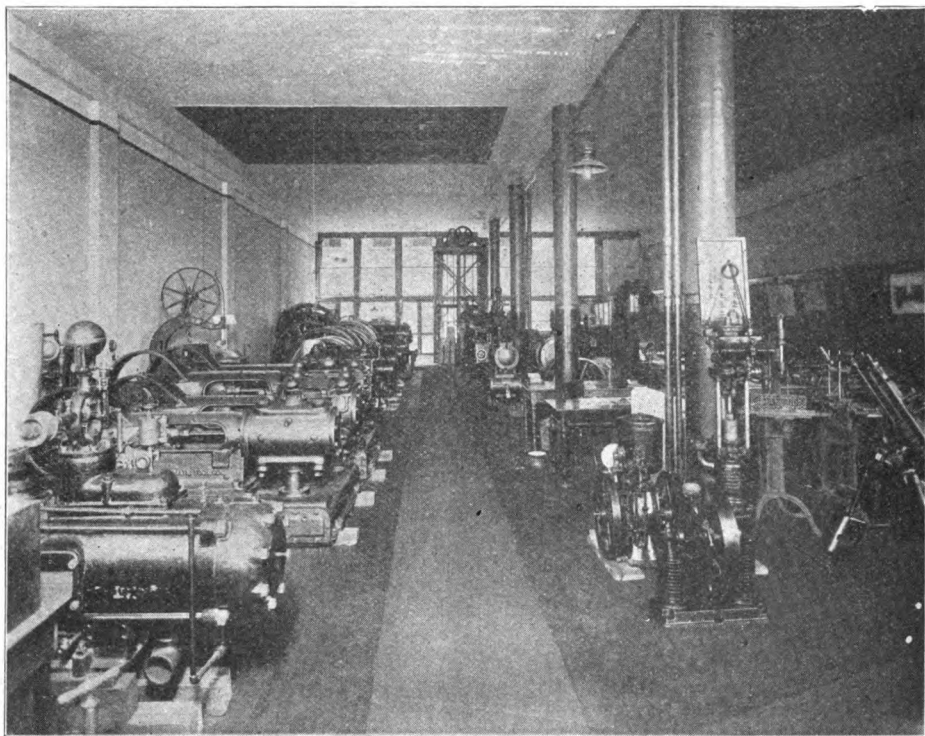
"Three hundred and twenty days without losing a day. Average run 20 miles a day. Average running expenses, including gasoline, oil and upkeep, \$15.30 per month."

### What They Say About the Little Giant in Savannah.

Mr. J. Kolman of the J. Kolman Company, Savannah, Ga., has this to say about his Little Giant: "Since I installed the truck I have been able to let two single teams go, have done all my hauling from the railroad that formerly cost me from \$7 to \$10 per day, and in addition I have increased my out of town, or country, business to a considerable degree, on account of the wide range of delivery afforded by the use of the truck. The Little Giant is certainly all you represented it to be, and I am thoroughly satisfied with it."

That the Savannah Supply Co. is satisfied with their Little Giant is evidenced by the following:

"We have this truck in service ten hours a day, and it has replaced three



single delivery wagons, and covers the ground much better, and is more satisfactory to our trade than the horse-drawn vehicles. We estimate the saving at several hundred dollars a month, considering the quick service that we are able to get in the outlying districts of the city. It has given us excellent service. We have had no repairs to make, and have on several occasions loaded it with 3,000 pounds and make deliveries to saw mills through sand roads.

We expect shortly to purchase another one and put it into service. You are at liberty to refer to us at any time."

J. J. McDonough, Jr., 110-112 Congress street, is the agent for the Little Giant in Savannah.

### **Try This on Your Grouchy Friends.**

Recipe for putting a bridle on a stubborn horse: Tell him a funny story and make him laugh.

### **Agency at Salt Lake.**

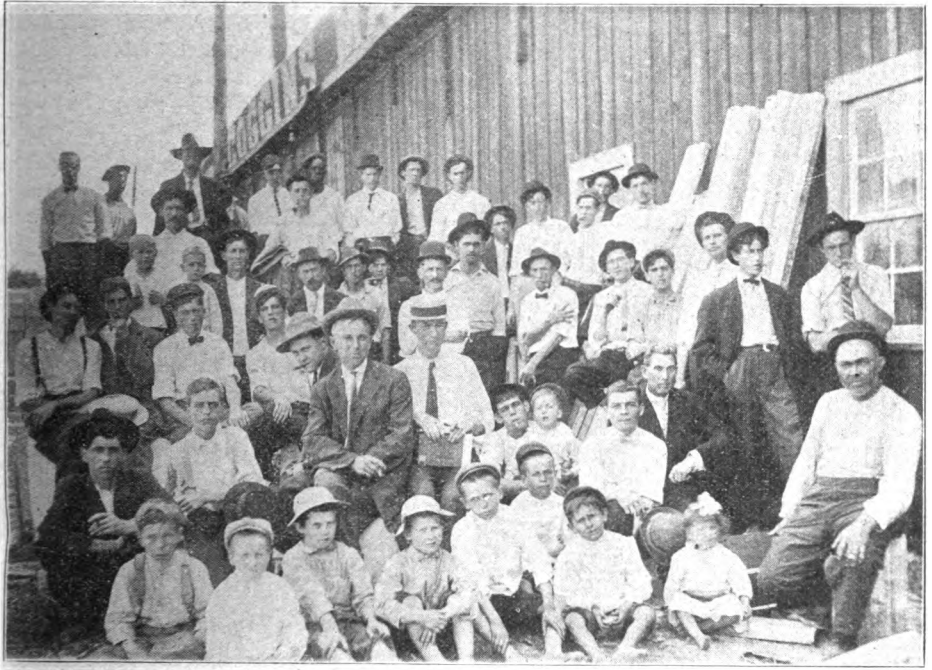
This is a view of the Richmond Machinery Co.'s new show rooms in Salt Lake City, Utah. The offices along the right hand wall are nicely fitted up, and a cleaner, tidier, better-appointed show room cannot be found in the west. Mr. F. C. Richmond is president of the company which has represented The Chicago Pneumatic Tool Co. in Utah and adjoining territory for many years, and is doing a fine business.

### **Believed in Being Truthful.**

He had had bad luck fishing, and on his way home he entered the butcher shop and said to the dealer: "Just stand over there and throw me five of the biggest of those trout!"

"Throw 'em? What for?" asked the dealer in amazement.

"So I can tell the family I caught 'em. I may be a poor fisherman, but I'm no liar."



### **The Coggins Marble Co., Canton, Ga.**

In the development of the marble and granite industry of Georgia one is forcefully reminded of the early days of the oil developments in the western states. Every one who has studied the situation the least bit knows that embedded in this empire state is to be found some of America's best and rarest marble, stone, and granite. As was the case in the development of the oil industry a great many people thought that all that was necessary to develop the marble and granite industry in Georgia was an office, desk, letter heads and a catalogue. This belief led to the establishment of a great many "wild cat" companies. These soon failed and the marble and granite development in this state was given a black eye. But this state of affairs, as in the oil fields, is rapidly passing, and men with brains, fair dealings and plenty of finances, on which to operate, are taking a hold of this great industry. With such equipment they are making it a success and today this particular Georgia product is being

shipped to all parts of America. The Coggins Marble company are exclusive retailers of monumental goods. They employ their own designers and artists. They have never made any attempt at wholesaling marble and granite, preferring to sell what they make and to make what they sell. As retailers of fine monuments they have through honest dealings and by turning out a superior quality of work, demonstrated that they are the leading retail concern of Georgia. Their goods are to be found in the cemeteries in every southern state and the trade is rapidly extending into the far west and northwestern states. They have shipped monuments into South Dakota, Nebraska, Kansas, Oklahoma and Texas. They use Chicago Pneumatic carving and lettering tools in their work. The above photo was taken at their annual barbecue, an event in which all of the employees of the company participate.

In times of peace a lot of otherwise sensible people prepare to get married.

# IDEAL POWER

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In the Interest of Compressed Air  
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subscription list.

## President Duntley Sails for Europe.

Mr. W. O. Duntley, president of the Chicago Pneumatic Tool Co., sailed for Europe on the Mauretania, April 2d. His itinerary will include all foreign offices of the company in England and on the continent and he expects to return about June 1st. An unfortunate incident in connection with his trip was the sudden and unexpected death of his father in Detroit on April 5, which occurred while the Mauretania was three days out at sea.

## Speed Recorders for Trucks.

In our March issue we featured the Boyer Speed Recorder, a device for recording the speed of railway trains. In the "Safety First" movement that is so much in evidence in railway circles, the advantages of the speed recorder are brought forcibly to the attention, and the management of many railroads are busy adopting them.

Recording the speed is of necessity the first step to be taken in the regulation of speed and in setting its limits, and now the truck users have come to the conclusion that the only way they can keep tab on their drivers is to take from them the opportunity to race or speed the cars beyond their safe limits.

Elsewhere in this issue we illustrate and describe the "Speedograph," a device designed for recording the speed of motor trucks, which we invite those interested to read.

## Sparking.

Sparking may not yet be an exact science. Most of us have tried it, some of us have found it successful, and some of us—well, they took us too literally.

The sparking of emery wheels is not a subject to inspire either the jokesmith or the poet, but it is one full of interest, and a general knowledge of it may be of much specific value to the mechanic or engineer.

Through the courtesy of the Norton Company, Worcester, Mass., we are permitted to publish the article on "Grinding Wheel Sparks" which appeared originally in the February number of Grits and Grinds, the house organ of the Norton Company.

## Man is a Failure.

When he has no confidence in himself nor his fellow men.

When he values success more than character and self-respect.

When he does not try to make his work a little better each day.

When he becomes so absorbed in his work that he cannot say that life is greater than work.

When he lets a day go by without making some one happier and more comfortable.

When he values wealth above health, self-respect and the good opinion of others.

When he is so burdened by his business that he finds no time for rest or recreation.

When he loves his own plans and interests more than humanity.

When his friends like him for what he has more than for what he is.

When he knows that he is in the wrong, but is afraid to admit it.

When he envies others because they have more ability, talent or wealth than he has.

When he does not care what happens to his neighbor or to his friend so long as he is prosperous.

When he is so busy doing that he has no time for smiles and cheering words.



### The Trials of the Order Clerk.

Order Clerks grow grey young. They can't help it. The worries of the sales department, the factory and the customer come together with a crash on the order clerk's desk. If he ignores them he is called down, if he heeds them he is stampeded and rips off a few yards on the far end of his three score and ten. He is held between the millstones and while one side is being slowly but surely ground away, so is the other. That is why Order Clerks never laugh or smile; they are too busy.

But hold! They are mind readers; they must be. Sherlock Holmes in his palmist day never aspired to the position of Order Clerk in a large manufacturing institution where over 50,000 different kinds of parts were made, catalogued and offered for sale. If he had, he would have died young.

A prominent concern dealing in air compressors recently received this order which is a fair specimen of a class of orders that come to the Order Clerk's desk and shorten his days for this world:

"Lincoln, october 211912.

dear sir

please fix me that walvoll for the air compressor, ore send me new pices he lost the air in same place keep the air i send down to you fuw week ago you know repar that pice what for.

yours truly."

We cannot help but feel that some philanthropist will some day provide a home for Order Clerks who have grown dippy in service. Such a home would be minus the telegraph and the telephone, the reading matter would be intelligible, all swearing would be positively forbidden, and the only orders tolerated would be those for cigars, bouquets and drinks for the inmates.

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Few men can look back at their past without wanting to dodge up an alley.

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A woman can't see the good of having a secret if nobody is to know about it.

### Cannon Made of Solid Rock,

When the island of Malta was under the rule of the Knights of St. John, they defended their fortifications with cannon bored in the solid rock. Each cannon contained an entire barrel of powder. In order to command the approaches, as many as fifty of these cannon were bored at different angles, so, no matter from what direction the enemy might come, he was covered by at least one of these formidable weapons. When the fame of these weapons became known to the world, rocks were transported to commanding positions and then bored out as cannon, but the labor involved was immense and the Rock Cannon of Malta have passed into history as the strangest weapons ever used by man.

What they lacked among other things was portability, a quality that ubiquitous man demands sooner or later of every contrivance he uses. It was so with cannon, and it is so with air compressors.

While portability in air compressors has always been a fact to the extent that they have never been built into the solid rock, practical portability, portability as understood by contractors, in field work, in the construction of bridges, elevated tracks, tanks and pipe lines, for prospecting, quarrying and road building was not realized in air compressors until the Chicago Pneumatic Tool Company placed on the market its Gasoline Driven Tank Mounted Air Compressor known as the "Chicago Pneumatic," as described in Bulletin No. 34 C.

Gasoline engine, Air Compressor, Air Receiver, four wheeled truck, with necessary provision for gasoline and circulating water storage—all combined into one compact unit, give to these compressors a degree of portability unequalled by any device of like character.

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Most women know more about men than men know about themselves.

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We would rather have our faults overlooked than to overhear them.



John Fletcher Duntley.

Mr. J. F. Duntley, father of W. O. Duntley, president of the Chicago Pneumatic Tool Co., died at his residence, 426 Cadillac avenue, Detroit, Mich., at 6 o'clock on the morning of April 5th.

His death was unexpected, for while he had not been well for some time, his condition was not thought to be alarming, and when only a few days before, he bade his son, W. O. Duntley, good-

bye on his departure for Europe, there was no intimation that the end was near and that the farewell would be the last one. His death was due to uremic poisoning.

The funeral was held Tuesday morning, April 8th, from the family residence in Detroit, the interment being at Denton, Mich. The "Old Guard" attended in a body; many friends came from out of

town and floral offerings were beautiful and profuse.

Mr. Duntley was branch manager of the Chicago Pneumatic Tool Co. at Detroit, and was actively interested in his work up to the time of his death.

In the early days of the Tool Company, Mr. J. F. Duntley, or "J. F.," as his friends preferred to call him, was its vice president. Many interesting stories have been told of the strenuous days, before the public took kindly to pneumatic tools, when J. F. with his grips and samples roamed over the country doing his share of the missionary work that proved so fruitful in later years.

It was in the annual conventions of the sales and factory organizations held in Chicago each year that Mr. Duntley took special delight, for it gave him the opportunity to meet the "boys" of the company with whom he had been so long associated.

At the meeting last January in the course of a speech by Mr. Fred Richmond, he made some allusions which, while not prophetic, will be recalled at this time by those who attended the banquet, and who are now mourning the loss of a dear old friend and counsellor.

We take the liberty of quoting from the report of the convention that was published in the January issue of this magazine, as follows:

"The climax of the evening was a speech by Fred Richmond of the Richmond Machinery Company, which represents the Chicago Pneumatic Tool Company at Salt Lake. Mr. Richmond referred to the festivity that was under way which he had no wish to dampen or disparage—but, in surprisingly eloquent words that could only come from a deep well of emotion he made an allusion that brought not only absolute silence and attention from his hearers but at which many of them were visibly moved.

He referred to the thoughts that must be passing through the mind of Mr. J.

F. Duntley, the Grand Daddy of the Tool Company, who had seen the very beginning of the organization which step by step had grown into one of the largest manufacturing and selling forces in the commercial world. Except a few of those present, none of them could realize what hardships characterized the early days of the company and how the trails had been blazed by the pioneers. He alluded to these pictures which like a pageant must be passing through Mr. Duntley's mind and then, drawing from a storehouse of eloquence, clear and wholesome as the west itself, he brought vividly to mind the picture of the father stepping to one side that his son, capable and strong, might pick up the burden and carry it further on to victory. What greater joy could come into a father's life than to see a son crowned with the glory of a success that is destined to perpetuate the family name in honorable history."

Last August Mr. and Mrs. Duntley celebrated their golden wedding, and, while Mr. Duntley was 71 years old, the casual observer would pronounce him 20 years younger, thanks to a temperate life and an optimistic philosophy.

Some of his happiest moments were passed in the society of the "Old Guard" of the Tool Company, whose interests centered largely in J. F., whom they chose to call their Grand Daddy.

It was fitting that the duty of bearing him away to his last resting place should fall to them. Thomas Aldcorn, C. E. Walker, Chas. Booth, C. T. Smith, George H. Hayes, Harry S. Hunter, Le Roy Beardsley and W. P. Pressinger were the pall bearers.

Mr. Duntley was a keen judge of human nature. He could read you like a book. It didn't take him long to size up a stranger and once he became your friend, you could always bank on him. Hosts of friends will mourn him, and extend their sympathy to his widow and to his two sons, W. O. and J. W. Duntley, who survive him.

### The Southern Toe Ventilator.

The wonderful achievements of precision machinery have been published in these columns from time to time. A correspondent from Winston-Salem, N. C., submits the following description of a new device in the manufacture of which precision machinery of the most refined type must be used.

"A friend of mine whose feet used to perspire very much, has invented what he calls "Southern Toe Ventilator," and lately had one installed in his shoes. The machine consists of a small motor concealed in the toe of the shoe with a battery to run it. The motor is controlled by a switch in the end of the shoestring. This switch is connected by a tiny wire running through the shoestring down to the motor. The motor is connected to a main shaft by a belt. Shaft is hung up horizontally across the end of the shoe; from this shaft are connected by belts four tiny fans, which set directly over the spaces between the toes. The fans are suspended by hangers bolted underneath the top of the shoe, and all that the wearer has to do whenever his feet perspire too much is to press a button at the end of the shoestring and start the motor and in a few moments his feet are dry.

"If you have not yet heard of the above invention you will probably be glad to have the information. If, however, you know about it—well, there will be nothing lost, anyhow.

"I wish to say that I have received your magazine regularly for about four years or more, and am much pleased with it."

### The Wrong Cylinder.

The motorist emerged from beneath the car and struggled for breath. His helpful friend, holding an oil can, beamed on him.

"I've just given the cylinder a thorough oiling, Dick."

"Cylinder!" howled the motorist; "that wasn't the cylinder, it was my ear!"

Even a successful checker player works on the square.

### Experience Taught Him.

A yellow-haired descendant of the Vikings walked into the office of a prominent attorney the other day and said:

"Ay want you to make some papers out. Ay buy a farm in Powell valley, and ay tank ay want a mortgage."

"Why do you want a mortgage," exclaimed the lawyer, "if you bought the farm? Don't you want a deed?"

"No, ay tank not. Sax years ago ay buy a farm and getta deed and odder fellar come along with a mortgage and tak da farm. Ay tank ay tak a mortgage."

### His System.

A gentleman, who was a stranger to the usual throng, stepped up to the mahogany, ordered a New Orleans fizz and, reaching in his pocket, pulled forth a live toad and placed it on the bar.

"For the love of Mike," yelled the man next to him, "Why the toad?"

"That toad plays a star part in a system that I have used for many years with great success," replied the gentleman.

"Spring it," shouted the mob.

"Well, you see, I take my little friend toad and place him on the mahogany in front of me and order my drink. I take my drink and then I order another, and sometimes another, and perhaps another. I look at my toad, and if there is only one toad there I stay and enjoy a few more rounds. As soon as there are two toads there instead of one I go home. I have never yet stayed until there was three. That's my system. Well, I don't mind if I do. A little more of the same, please."

### When She Would Return.

"I saw your mother going to one of the neighbors just as I crossed the street," said the lady caller to her friend's little son. "Do you know when she will be back?"

"Yes'm," answered the truthful Jimmy; "she said she'd be back just as soon as you left."



The truth seeker has a lifetime job.

And some rich men are as crooked as the dollar mark.

Even an iron watchdog can't scare the wolf from your door.

All things come to those who are willing to meet them half way.

It makes some girls awfully tired to do anything but go visiting.

One way to save money is to run when you see a friend coming.

Something is wrong when a man measures his means by his meanness.

While a pull will help in politics, it is more satisfactory to work for your living.

A fool woman tries to drive a man with a club. A wise one leads him by the hair.

Nothing pleases some folks more than to be the first to peddle a piece of unsavory gossip.

How absurd to act like a fool and then become indignant when attention is called to it!

We once knew a bachelor who pretended to be optimistic all the time. He was afraid that otherwise some woman would try to cheer him up.

Never send a fool on a fool's errand. Go yourself.

An honest man is working overtime when he cheats himself.

Hospitality that puts a guest in the hospital is nothing to boast about.

Gamble with your wife if you must gamble. It keeps the money in the family.

Even horses are sometimes driven to drink—when attached to brewery wagons.

The man who pays as he goes may not go very far, but he always gets there.

When women vote and the election doesn't go to suit him a man can blame it on his wife.

We should feel pity for the man who is forced to take consequences that he isn't entitled to.

Few of us have the courage to point out our own mistakes. This shows how brave our neighbors are.

If the average man could have his own way all the time he would keep others busy getting out of it.

Words cannot express the contempt a small boy has for a little girl, or the admiration he can generate for her after a few years.

# Scientific Management



applied to *Foundry Practice* demands labor saving appliances that stand up in service.

## Boyer & Keller Rammers

appeal to progressive Foundrymen because they possess this quality in addition to their merits of Power, Lack of Vibration and Economy of Air Consumption.

*Send for Foundry Bulletin  
No. 121*



### Chicago Pneumatic Tool Co.

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Chicago

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# IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances  
By THE IDEAL POWER PUBLISHING COMPANY  
Fisher Building : Chicago

Vol. 10.

MAY, 1913.

No. 2.

## "Safety First" in Pneumatic Riveting

"Safety First" in Pneumatic Riveting as in all occupations with a hazard is receiving a great deal of attention today, not only from the users of the hammers themselves but from the law-makers and the manufacturers as well. Ever since pneumatic riveting hammers were first placed on the market, manufacturers have offered safety appliances and attachments to be used in connec-

About five years ago the Chicago Pneumatic Tool Company perfected arrangements to market the Merrill-Shoffner Tool Holding Device, interest in which has revived considerably in the recent "safety first" agitation. The M-S Tool Holder as it is called consists of a knurled nose piece which is screwed over the end of the hammer cylinder, the cup end of the rivet set projecting through



Boyer Hammer fitted with M-S Safety Device.

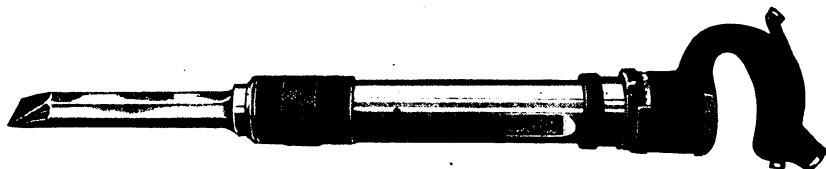
tion with the hammers in various ways, leaving it optional with the purchaser to say whether he wished the hammers fitted with or without these devices. As a matter of fact, the first successful pneumatic riveting hammer made was considerably complicated by mechanism designed to prevent the shooting out of the rivet set. But workmen preferred the simpler but more dangerous riveting guns in which the safety devices were omitted.

an opening in same. This nose piece or collar effectively holds the rivet set in place. The advantage of the M-S Tool Holder lies in its simplicity and in the fact that it can be applied to any hammers now in use which may be sent in to the factory for that purpose.

Another more recent safety device is that known as the Piston Retaining Wall. The lower end of the cylinder is slightly closed in with a taper throat, corresponding with the taper end of the

piston. It is impossible for the piston to come out of the cylinder at the lower end either by accident or otherwise. A secondary advantage of this method is that it prevents the use of unreasonably short pistons. Operators using this style of safety hammers are cautioned not to run the hammers unless held against the work in the usual way, for

undue and unnecessary jamming of the taper ended piston in the cylinder can do the latter no good, and may result in damage to the cylinder. The Chicago Pneumatic Tool Company can supply any size of either Boyer or Keller Riveting with "piston retaining wall" when so ordered.



Boyer Riveting Hammer fitted with M-S Chisel Holding Sleeve—an effective Safety arrangement. Neither chisel nor piston can fly out.

### A Word About the Boyer Hammer.

The first successful pneumatic hammer ever placed on the market was the Boyer, and the place it made for itself in the beginning has been held to this day.

The design of the Boyer hammer is so logical and simple that it has ever been the despair of competition. Pleasing to the eye, its proportions impress one with their absolute correctness.

One of its first claims to distinction, recognized by every mechanic into whose hands it came, was the excellent workmanship it displayed, and the chief aim of the Chicago Pneumatic Tool Co. has always been to spare neither pains nor expense to preserve its high standard of workmanship.

Divided into three distinct members, cylinder, handle and valve, it recognizes a principle of construction that provides for quick examination and economical upkeep and repairs. In each of these members there is a moving part subject to wear, but in varying degrees. It is frequently possible to replace but one of these members and obtain a comparatively new hammer, as a result.

The handles are interchangeable on all sizes of chipping hammers and on all sizes of riveting hammers, so that a worn out handle or cylinder does not mean the passing of a complete tool, but of the worn member only.

All parts are made absolutely interchangeable on jigs and templates.

In common with all tools made by the Chicago Pneumatic Tool Co., a complete and accurate record is kept of cylinders, valves and handles, as well as complete tools, so that customers ordering duplicate parts are assured of getting parts that fit.

Their new Bulletin 124 tells all about it. Write for it.

### And the Foreman Smiled and Felt Better.

Foreman—"Say, I'm up against it. I'm supposed to find work for that policeman, but I don't know what to put him at."

Superintendent—"Does he know how to run a pneumatic hammer?"

Foreman—"Yes; anyone can do that."

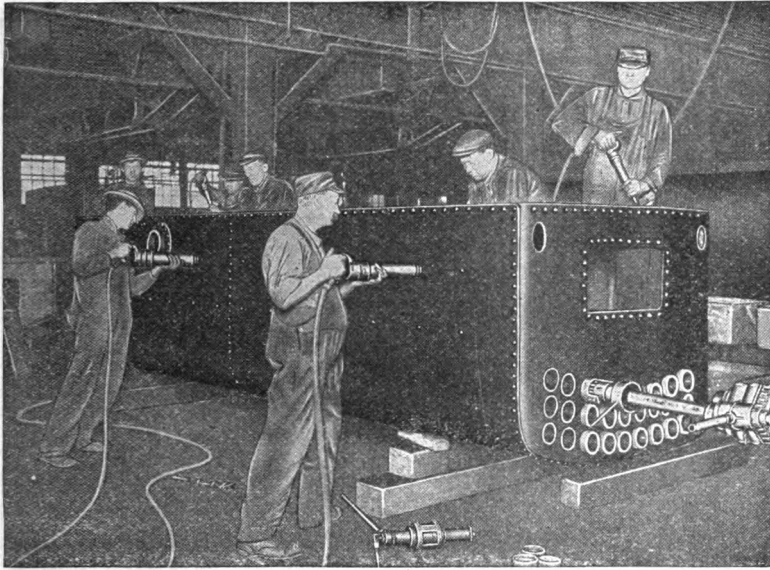
Superintendent—"Well, put him at copper riveting; he ought to make a hit."

"Were your problems all correct, dear?"

"No, mamma, they were every one wrong," replied the child.

"All wrong?" repeated the amazed mother. "Oh, I'm so sorry."

"Well, mamma," said the little one consolingly, "you needn't worry. All the other little girls' mammas had them wrong too."



Scene in boiler shop of Kroeschell Bros. Co., Chicago, showing Boyer Riveting, Chipping and Calking Hammers in use on Greenhouse boilers.

### How to Shake Hands.

Shaking hands is an art. Nothing makes such an impression on a man at the first meeting as a good, hearty handclasp. You can somehow convey a world of meaning in the way you shake hands. It is an unfailing index to character, and without thinking or reasoning it out we receive impressions which most of us would be at a loss to understand.

The psychology of the handclasp is something which every salesman ought to study.

Here are some of the things he might avoid with good cause:

Don't grasp a man's hand with a vise-like grip and crush his fingers so that he has to pry them apart and then tie them up where his ring has cut through the flesh.

Don't pump his arm up and down for a half hour.

Don't give him only three fingers—use your whole hand.

Don't knock his knuckles on something hard just to be funny.

### What a Man Is Made Of.

The average man has "ingredients" to make fat for seven bars of soap, iron for a medium-sized nail, sugar to fill a small bowl, salt to fill a shaker, lime to whitewash a chicken coop, phosphorus to make twenty-two hundred match tips, magnesium for a dose of magnesia, sodium to neutralize a pint and a half of water, potassium to explode a toy cannon, sulphur to rid a dog of fleas, and albuminoids to make a case of eggs.

### The Proper Way.

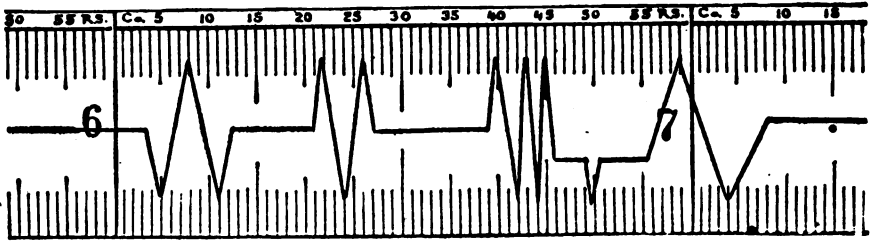
A little boy had eaten too much underdone pie for his Thanksgiving supper and was soon roaring lustily.

His mother's visitor was very much disturbed.

"If he was my child," she said, "he'd get a good, sound spanking."

"He deserves it," the mother admitted, "but I don't believe in spanking him on a full stomach."

"Neither do I," admitted the visitor; "I'd turn him over."



Facsimile of Record made by Speedograph.

### Scientific Management of Motor Trucks.

"One of the most surprising things in connection with the use of motor wagons in this country is the almost criminal lack of scientific measurement in recording the performance of the machines," says The Power Wagon.

"A speed indicator is also an important adjunct to a motor wagon, as well for its moral effect on the driver as for its actual use. It is advisable that both mileage and speed recorders be of the Autographic Recording Type so that a permanent log of each machine may be available for the office records. With these and a record of the loads, the worth of a driver may correctly be estimated in the majority of cases, and his wages can then be fixed according to his effectiveness and not by some arbitrary scale that has no bearing on the performance of machine and man."

The Speedograph is the best type of autographic Time, Distance and Speed Recorder devised for the purpose.

The following is an explanation of the record:

The vertical lines indicate vehicle is moving; horizontal lines when idle.

The tape is divided into minutes, and it is moved past the pencil point at the rate of three inches per hour by clock work.

The pencil point travels vertically up and down three-quarters ( $\frac{3}{4}$ ) of an inch for each half mile and is operated by the wheel of the vehicle, namely, for every half mile the pencil travels three-quarters of an inch.

The above record shows that the vehicle started at 6:03 and ran  $1\frac{1}{2}$  miles

at the rate of ten miles per hour (or one mile in six minutes). From 6:12 to 6:21 the vehicle was standing. From 6:21 to 6:27 it ran  $1\frac{1}{2}$  miles at the rate of fifteen miles per hour (or one mile in four minutes). From 6:27 to 6:39 the vehicle was standing. From 6:39 to 6:42 moved at the rate of fifteen miles per hour for three-quarters mile, then at the rate of thirty miles per hour for  $1\frac{1}{8}$  miles. At 6:46 stopped three minutes, then ran one-quarter mile at ten-mile rate, stopped five minutes; then ran  $1\frac{1}{8}$  miles at the rate of six miles per hour (or one mile in ten minutes), stopping at 7:08.

The Chicago Pneumatic Tool Co. are General Distributors for United States, Canada and Mexico, and requests for prices and other information should be directed to them.

### What a Little Giant Truck Did.

A very interesting truck demonstration was recently pulled off in Pittsburgh when Mr. G. R. Giroux, Pittsburgh representative of the Chicago Pneumatic Tool Company, undertook to demonstrate to the South Pittsburgh Water Co. what a Little Giant Commercial Car could do for them over the hills and muddy roads in that vicinity.

Mr. Giroux's account of it follows:

"This demonstration consisted of the hauling of a load amounting to about 1,000 pounds, being three barrels of soda ash which weighed 215 pounds each and three men besides our driver, weighing an average of 160 pounds each. We had to pull this load from the Distillation Plant of the Water Company up an



Two views of the Little Giant taken during the South Pittsburgh Water Co. Demonstration.

unpaved hill, a good half mile, the grade at times running as high as 20 per cent, as far as I can judge it, and we were in mud almost up to the hubs at times. After we got through the climbing on to a paved street, both Mr. Keene, the superintendent, and Mr. Powell, the engineer, told me that frankly they thought they had us stalled, and to be honest with myself, when I saw what we were up against, I thought that too, but the 'Little Giant' got away with it. It was a gruelling test and slow speed work all the way, and we had to put on the skid chains as one of the photographs shows. Both Messrs. Keene and Powell tell me that they had a good, stout two-horse team that usually does this work, but it never does better than haul one barrel at a time. The time consumed on this trip was about 25 to 30 minutes and it generally takes their team at least twice as long to haul one-third of the load, as they have to stop every 25 to 30 feet to give the horses a blow. They also stated that they did not think

there was another light delivery car that could haul the load that we did in the space of time and get out of it as good as the 'Little Giant' did.

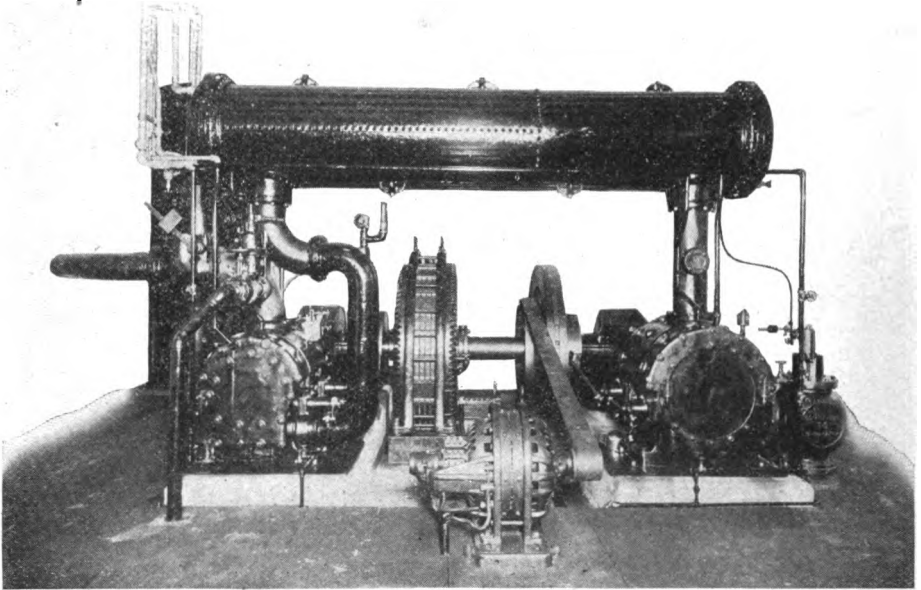
"Mr. Keene drives a pleasure car, and the first thing he did when we got through with the pulling was to feel our radiator. It was warm but not hot. He said he never goes up this grade unless his radiator boils over, and this made quite an impression on him."

#### Did It Get You?

Simeon Ford, at a dinner of hotel men in New York, discussed a new disease.

"There's a new disease called shopper's cramp," he said. "It appears early in December, becomes violently epidemic about the middle of the month, and ends suddenly on the evening of the 24th.

"Women feel shopper's cramp in the arms, the limbs, everywhere; but it attacks the husband only in one place—the pocket."



This is the "Chicago Pneumatic" compressor recently installed by the Seattle Construction and Dry Dock Company at Seattle, Wash. It is a 23"x14"x16" machine with a capacity of 1,538 cubic feet of free air per minute at rated speed of 200 R. P. M. It is driven by a 2,200 volt, 2 phase, 60 cycle 268 H. P. Ridgway self-starting synchronous motor with belted exciter. Another view is shown on opposite page.

### How It Feels Under Pressure of Compressed Air.

Two Englishmen, Messrs. Hill and Greenwood, recently subjected themselves to a series of experiments in the course of which the pressure reached ninety-two pounds that of the atmosphere. This, says Cassier's Magazine, would correspond to a head of about 212 feet of water.

The period of compression was fifty-four minutes, and of decompression 2 hours and 17 minutes, or substantially more rapid than M. Hersent's experiments with lower pressures. The time spent under the highest pressure was only a few minutes.

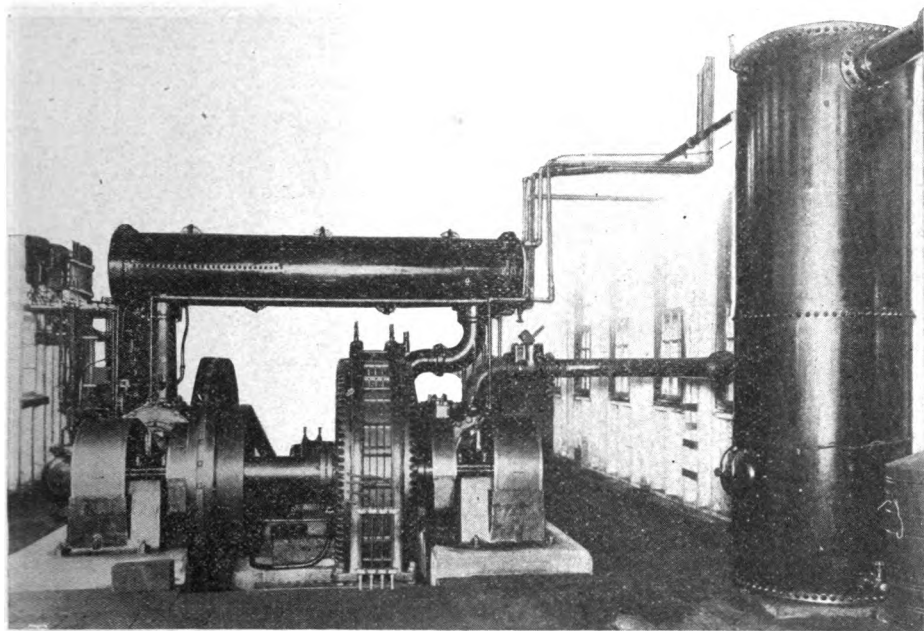
After coming out of the cylinder the subject felt some neuralgic pains in the forearms. These did not last long and were attributed mainly to the fact that he remained quiet within the cylinder, which further experience proved to be a mistake, it being of great importance

to keep every joint and muscle in motion, and to change position repeatedly, so as to keep the capillary circulation active in every part. When this precaution is taken the rate of decompression can be increased.

As a result of their experiments Messrs. Hill and Greenwood consider that work may be carried out safely in 210 feet of water, or possibly even 250 feet, the real limit being fixed by the fact that, when compressed, oxygen has a tonic effect.

Thus, with an air compressed to ten atmospheres—equivalent to a head of about 350 feet of water—animals are liable to be seized with convulsions within twenty minutes. In these experiments there was no confirmation of Dr. Snell's opinion that the presence of CO<sub>2</sub> in the respiration air has particularly pernicious effect.

A careful record was kept of the experiences of the subject undergoing ex-



See opposite page for description.

periment. At sixteen pounds pressure the voice, it was noted, became metallic, and at forty-five pounds pressure it became impossible to whistle. At the highest pressure reached, articulation was difficult. There was no marked effect on the pulse. Further, after the nervousness due to the novelty of the conditions had worn off, there was no feeling of being under pressure. The sense of hearing appeared to be rather more acute than in the normal condition.

#### **The Reputation of a Contractor Is No Greater Than the Quality of His Work.**

The quality of a piece of work is determined by three things:

By the dispatch with which it is performed.

By its style.

By its permanence.

The dispatch with which the work is done excites the curiosity of even the lay observer who watches its progress and development.

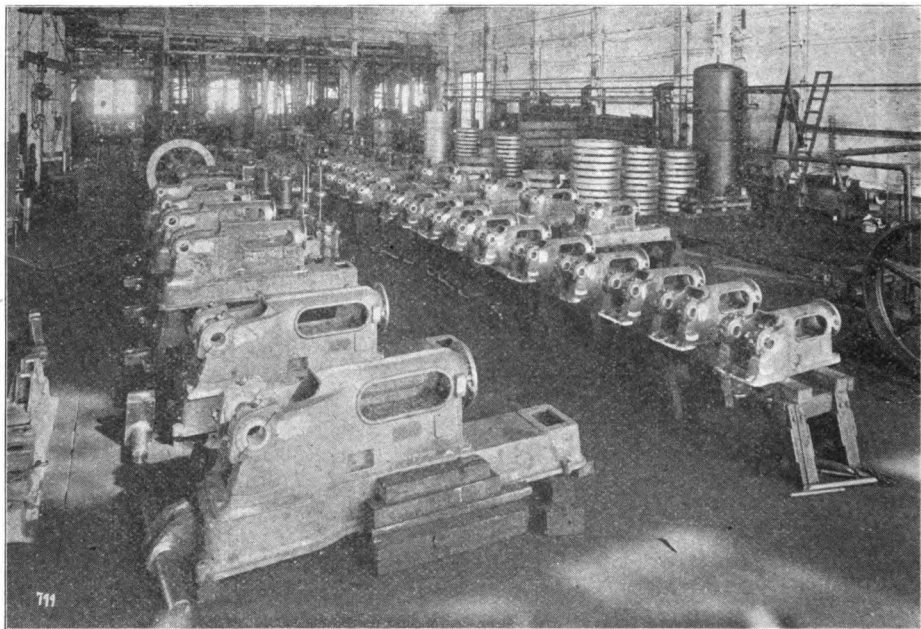
The style of a piece of work, that peculiar atmosphere of having been well done, of not only having been carried out according to specifications, but bearing the stamp of individuality—the trade mark of mastery—excites the admiration not only of the lay observer, but of him who is qualified to judge, and becomes at once the inspiration and the despair of competitors.

The permanence of a piece of work excites the wonder of succeeding generations and is a perpetual source of inspiration.

The Egyptians would be forgotten were it not for the permanence of the pyramids. How much greater would have been their reputation if something of the beauty and style of the Parthenon had been imparted to their work. How much greater still would have been their reputation if, in the building, they had not required generations or even centuries, but had done it with dispatch.

We do not venture to say how long it would have taken the Egyptians to have





Scene in Assembling Department, Franklin (Pa.), Plant No. 1, Chicago Pneumatic Tool Company illustrating Quantity Production as applied to Air Compressors.

built the pyramids with Chicago Pneumatic Tools, but we do know that the greatest structures of modern times—sky-scrapers, bridges and tunnels—are being built with Boyer Hammers, Little Giant Air Drills, Duntley Electric Drills, Chicago Giant Rock Drills, and Chicago Pneumatic Compressors in the service of intelligent, enterprising contractors.

With Chicago Pneumatic machinery a contractor is able to do the work with dispatch, to give it style, to make it permanent; the three things that make up the quality of his work—the three things that enable him to preserve, if not enhance his reputation, and make it possible to survive in the strenuous struggle for existence.

But the reputation of a contractor is no greater than the quality of his work; and quality outshines, outlasts everything.

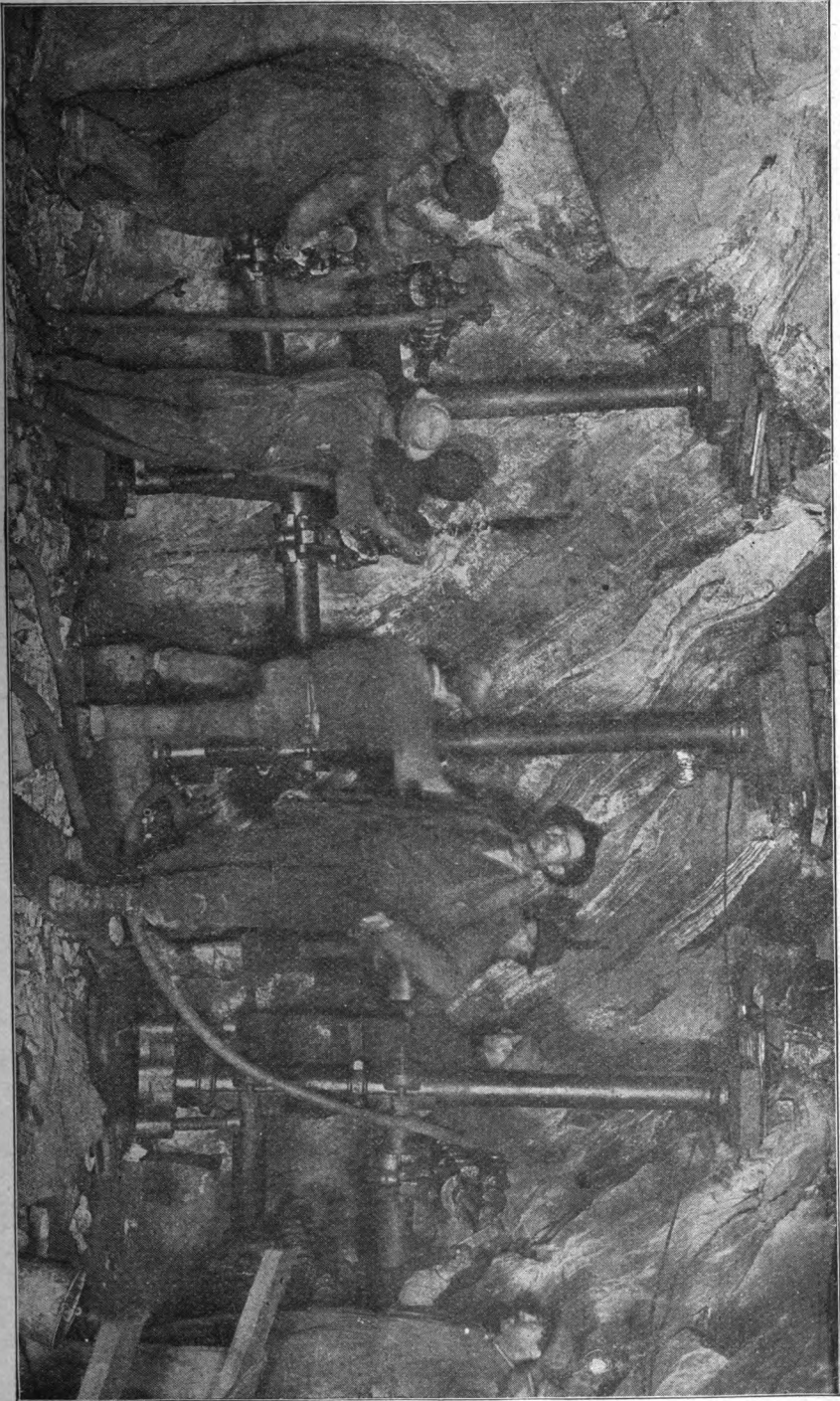
Contractors interested in the quality

of their work should send for our catalogues, bulletins and circulars.

Chicago Pneumatic Tool Co., Fisher Bldg., Chicago.; 50 Church St., New York. Branches everywhere.

### Weight of Trains.

The extreme weight and speed of modern railway trains is a train weighing 400 tons moving at a velocity of 75 miles an hour. Many people are amazed at the destruction effected by railway trains when they strike an object at rest, such as a delayed train. A train moving at the rate of 75 miles an hour passes over 110 feet per second. A mass of 400 tons propelled at that rate of speed contains energy nearly twice as great as that of a 2,000-pound shot fired from a 100-ton Armstrong gun. No wonder that such a train proves a terribly destructive projectile.—Railway and Locomotive Engineering.



Chicago Giant Rock Drills on Catskill Aqueduct.

# IDEAL POWER

PUBLISHED MONTHLY  
In the Interest of Compressed Air  
and Electrical Appliances

BY THE  
**IDEAL POWER PUBLISHING CO.**  
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CHICAGO, U. S. A.

C. I. HENRIKSON Editor

Vol. 10. MAY, 1913. No. 2.

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United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 50 cents per year

ADVERTISING RATES ON APPLICATION  
Send 25 cents and have your name put on our  
subscription list.

## New Complete Line of Pneumatic Tool Bulletins.

With the issuance of Bulletin 127 which will make its appearance the latter part of May, the Chicago Pneumatic Tool Company will have the most complete line of pneumatic tool literature ever published. The following is the list by bulletin Nos.:

121—Pneumatic Rammers and Pneumatic Foundry Appliances.

124—Pneumatic Riveting, Chipping and Calking and Stone Hammers.

125—Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.

126—Compression Riveters.

127—Pneumatic Drills, Reamers, Wood Borers, Flue Rolling and Tapping Machines and Grinders.

128—Miscellaneous Equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.

129—Hose, Hose Couplings and Hose Clamp Tools.

130—Lubrication of Pneumatic Tools.

131—Miscellaneous Tools, viz: Pipe Benders, Air Forge, Bolt Nipper, Drilling Stands, Blow-off Cocks, Bell Ringers, Drill Repair Vises, Painting Machines.

132—Pneumatic Motors and Pneumatic Geared Hoists.

133—Cylinder Air Hoists and Jacks.

Any or all of these bulletins will be sent to interested parties on request.

## Railway Business Association Bulletin No. 12.

The subject of this Bulletin is "The National Menace of Railway Strikes," copies sent free on application to Frank W. Noxon, Secretary Railway Business Association, 2 Rector Street, New York City.

## Poetry From the Pacific.

A member of the Chicago Pneumatic Organization on the Pacific coast is a poet as well as a salesman. When solicited for permission to use his name in connection with his "Toast to the Future" in this issue, he modestly replied, "Merely state it came from the Pacific coast."

Now Mr. ——— (we almost said it) there's no need of depriving the muse of a little glory, nor of hiding your light under a bushel. Don't be timid; come again; we won't look.

## College of Engineering Summer School.

Announcement is made of the thirteenth annual six weeks summer school of the College of Engineering of the University of Wisconsin, which opens on the twenty-third of June.

Courses of instruction and laboratory practice are offered in Electrical, Hydraulic, Steam and Gas Engineering, Mechanical Drawing, Applied Mechanics, Testing of Materials, Machine Design, Shopwork and Surveying, in addition to which subjects may be taken in the College of Letters and Science.

For bulletin address F. E. Turneure, University of Wisconsin, Madison, Wisconsin.

## What Is Life?

(By Robert Ingersoll.)

Life is a narrow vale between the cold and barren peaks of two eternities. We strive in vain to look beyond the heights. We call aloud, and the only answer is the echo of our wailing cry. From the voiceless lips of the unreplying dead there comes no word; but in the night of death, hope sees a star, and listening love can hear the rustle of a wing.



Driving Screw Spikes with Duntley Electric Spike Driver on Milwaukee Street Railways.

### Killed Their Husbands, That's All.

An interested subscriber to Ideal Power sends in this original story: "I was returning from a nickel show with my little girl who is eight years old, and a little girl of the same age that lives across the street from us. I was walking right behind them and on our way home it was necessary for us to pass by a female reformatory in the northeastern part of Indianapolis. My little daughter remarked to the other little girl who was with her, 'Catherine, do you know that they have some ladies in that prison over there, and they are going to keep them all of their lives, and they never done a thing in the world but killed their husbands?'"

### Geel! But This Sounds Good.

I want room so I can go out in my own back yard and yell and not attract attention nor the police. There are other essentials: a fireplace—no lares and penates will roost on a radiator, and no love and inspiration breathes out of a grilled hole in the floor—I want to see wood burn. I want trees, big, scaly ones, planted before I was born and to flourish after I'm gone, yet toward which I can indulge in the fool satisfaction of owning them; a hound pup to wag his tail at me and look at me with worship; a cat to sit by the fire and look comfortable; and, when spring comes, hyacinths in the garden and fuzzy little peeping chickens around the doorstep; kittens doing somersaults; a whole ham cooked at once; a table full of my kind of folks to eat and drink with; babies; young folks sparking and sparkable; a neighbor with whom I can sit on his back porch and smoke and find fault with the universe; an enormous bathroom; slippers; no end of clean things—such as towels, napkins and tablecloths; no wall paper, only books everywhere; a den where I can be alone; to travel often enough to appreciate my own harbor.—Frank Crane.

### Special Intoxication.

A man was up in the municipal court a few days ago charged with "special intoxication." The reader always wonders what sort of superjoy that is, but such speculations have nothing to do with this story.

"You look like a fairly decent fellow," said the judge, "and I hate to send you to the workhouse. Suppose I gave you a suspended sentence, what would you do to deserve it?"

"I'd sign the pledge, your honor!" cried the prisoner eagerly.

"Indeed! And for how long?"

"Why, your honor, I usually sign it for life!"—Cleveland Plain Dealer.

Charity is responsible for a lot of worthless advertising.

### A Toast to the Future.

(A contribution from the Pacific Coast.)  
We've always a friend in the future—  
In the years that stretch on ahead.  
There's always a toast for tomorrow  
With its lightsome pledge  
Of life, laughter and love  
And paths girt with roses red.

But here's to what lies behind us as well,  
Its hell-swept wastes and its sunlit lands.  
A fearsome thing is the thread of fate—  
But of silken mesh  
And kindly, golden store  
To the soul who understands.

I give you then, the world and its web  
Of transport and failure—of smiles and  
tears.  
That memory's mirror may ne'er lose  
its sheen—  
That hope may last  
And our joys increase—  
Is my toast to the future years.

### The Girl with the Rose.

A Futurist Idyl, by Gus, the Shipping  
Clerk.  
"Climb not the rutabaga tree,"  
Its mother cried, and as she sank,  
The purple panther swooned. Too late  
The shad had caroled from her plank.

"Conductor, stop the car," he wailed;  
We jammed the yucca through the  
door;  
Midst ruins of a burning world  
They hurled the pancake to the floor.

### The Load Invisible.

John Wilson, T. R. Selkirk, Ralph  
Harding and Henry Evans, all Bitter  
Creek Valley farmers, were in town  
Monday, enjoying themselves.—Country  
Newspaper.  
Four farmers spent the day in town.  
At dusk they took the homeward  
road;  
The things they'd bought were not in  
sight,  
Yet each one had a heavy load.  
—E. G. K., Grass Valley, Cal.

### The Man Who Smiled.

There was a man who smiled,  
Because the day was bright;  
Because he slept at night;  
Because God gave him sight  
To gaze upon his child!  
Because his little one  
Could leap and laugh and run;  
Because the distant sun  
Smiled on the earth, he smiled.

He toiled and still was glad  
Because the air was free;  
Because he loved, and she  
That claimed his love and he  
Shared all the joys they had!  
Because the grasses grew;  
Because the sweet wind blew;  
Because that he could hew  
And hammer he was glad.  
—S. E. Kiser.

Ah, glad should that man be  
To hammer at his work  
In sunshine or in murk  
And know no cause to shirk;  
But gladder, you'll agree,  
Will be the workman's heart,  
If he can do his part  
And hammer at his art  
With Boyer Longstroke Riveting  
Hammers. —C. I. H.

### Easily Arranged.

I never liked the "turkey trot,"  
But if some girl of merit  
Should tease me to—why, like as not,  
I'd promptly grin and "bear it!"  
—Dartmouth Jack-o'-Lantern.

The wise man bottles his wrath and  
then proceeds to lose the bottle.

A woman can't help looking indignant  
every time she sees a chicken incubator.

The bright baby a mother tells about  
usually has an off day when you meet it.

When a man gets engaged to a girl  
all the other fair maids of his acquaint-  
ance begin to talk about his poor taste.

### The Creation.

Some of the bathing suits were of blue silk, and with these blue silk stockings were worn. Others were of red or white silk, with red or white stockings. But the prettiest were the simplest—well-cut bathing suits of black mohair, with stockings of black silk.

Under his umbrella the Hindu said softly, as he gazed at all those slender sylphs moving, in their pretty bathing suits, up and down the glittering beach:

"This jolly sight reminds me of the Hindu fable of the creation of woman. It's a fable far more poetical than your Christian one, which forms woman out of a man's rib. Listen and see if you don't agree with me.

"Twashtri, at the beginning of time, created the universe and man; but when he came to create woman, he found that he had exhausted his materials, and no solid elements remained.

"Twashtri mused a while. Then an idea came to him, and, in order to make the first woman, he took moonlight and the undulations of the serpent, the slenderness of reeds and their soft movement in the wind, the tears of a rain-cloud, the velvet of flower petals, the grace of a roe, the tremor of grasses, the vanity of the peacock, the softness of down on the dove's breast, the hardness of diamonds and the sweetness of honey, the cruelty of the tiger and the wrath of fire, the cold of snow, the chatter of a jay, and the coo of a dove—and out of these Twashtri created woman."

### California Ranching Company Greatest Proposition on Earth.

Dear Sir:

Knowing that you have some interest in the fur business, I take the liberty of presenting you with what seems to be a most wonderful business proposition, and which, no doubt, you will take a lively interest in and perhaps wire us the amount of stock that you wish to subscribe toward the formation of this company.

The object of this company is to operate a large cat ranch in or near Oakland,

California, where land can be purchased for this purpose.

To start with, we collect about, say one hundred thousand (100,000) cats. Each cat will average twelve (12) kittens per year. The skins run from ten (10) cents each for the white ones to seventy-five (75) cents for the pure black. This will give us twelve million (12,000,000) skins for a year to sell on an average of thirty (30) cents a piece, making our revenue about ten thousand (10,000) a day gross.

A man can skin fifty cats per day for two dollars (\$2.00). It will take about 100 men to operate the ranch and therefore the net profit will thus be about nine thousand eight hundred dollars (\$9,800) per day.

We will feed the cats on rats and will start a rat ranch next door. The rats will multiply four times as fast as the cats, therefore if we start with one million rats, we will have four rats a day for each cat, which is plenty.

Now then, we will feed the rats on carcasses of the cats from which the skins have been taken, thus giving each rat a fourth of a cat.

It will thus be seen that the business will be self sustaining and automatic all the way through. The cats will eat the rats and the rats will eat the cats and we will get the skins.

Awaiting your prompt reply, and trusting that you will appreciate the opportunity that I give you and that you will grasp same and get rich quick, I remain

Yours very truly,  
CALIFORNIA RANCHING CO.

### Where He Got It.

Teacher—Now, Willie, where did you get that chewing gum? I want the truth.

Willie—You don't want the truth, teacher, an' I'd rather tell a lie.

Teacher—How dare you say I don't want the truth! Tell me at once where you got that chewing gum.

Willie—Under your desk.—Judge.

### Natural Conclusions.

Addison Mizner, the well-known New York first-nighter, told at a studio supper a good story about a prominent business man.

"A chandelier fell in the night at his house," explained Mr. Mizner, "making a terrific crash, and in the morning at breakfast he said to his wife, with a laugh:

"What did you think, my love, when you heard the chandelier fall in the dead silence of the night?"

"I thought, darling," his wife answered, "that you had been detained on business again and were getting upstairs as quietly as you could."

### Following Orders.

Doctor (to Mrs. J., whose husband is very ill)—"Has he had any lucid intervals?"

Mrs. J.—"E's had nothink except what you ordered, Doctor."

### Cause for Thankfulness.

He tiptoed softly up to the boss' desk, and assumed an expectant attitude.

"Will it be possible for me to get off for a couple of hours tomorrow afternoon," he inquired. "My wife wants me to go shopping with her."

The boss looked up with an ominous glare.

"I should say not," he roared. "You'll stay here and attend to business."

"Thank you very much, sir," said the meek one, turning to go. "You are very kind."

### Next to Nothing.

First Chorus Girl—"The manager has just posted a notice forbidding us to wear any jewelry on the stage."

Second Ditto—"Can you beat it? And that is about all he has been letting us wear."

### Perfectly True.

Miss Catt—"She has a fine complexion."

Miss Nipp—"Yes; that's an added attraction."—January Lippincott's.

### A Wise Kid.

A tall man, impatiently pacing the platform of a wayside station, accosted a red-haired boy of about twelve.

"S-s-say," he said, "d-d-do y-you know ha-ha-how late this train is?"

The boy grinned, but made no reply. The man stuttered out something about red-headed kids in general and passed into the station.

A stranger, overhearing the one-sided conversation, asked the boy why he hadn't answered the big man.

"D-d-d-ye wanter see me g-g-get me fa-fa-face punched?" stammered the boy. "D-d-dat big g-g-guy'd think I was mo-mo-mockin' him."

### True Loyalty.

Jenkins, a newly wedded suburbanite, kissed his wife good-by the other morning and, telling her he would be home at six o'clock in the evening, got into his auto and started for town.

At six o'clock no hubby had appeared, and the little wife began to get nervous. When the hour of midnight arrived she could bear the suspense no longer, so she aroused her father and sent him off to the telegraph office with six telegrams to as many brother Elks living in town, asking each if her husband was stopping with him overnight.

Morning came, and the frantic wife had received no intelligence of the missing man. As dawn appeared, a farm wagon containing a farmer and the derelict husband drove up to the house, while behind the wagon trailed the broken-down auto. Almost simultaneously came a messenger boy with an answer to one of the telegrams, followed at intervals by five others. All of them read:

"Yes, John is spending the night with me."—January Lippincott's.

### Another Kind.

"I see they're calling strikes in every city and town in the country."

"What's the matter with those labor fellows, anyway?"

"It isn't the laboring classes. It's the umpires."



Sure things are sometimes uncertain.

It is easier to rest too much than work too hard.

Nobody likes the man who thinks he knows it all.

The average man's popularity seldom outlasts his money.

The more a man practices economy the less popular he will be.

One man's poison is another man's bread—if the latter is a doctor.

Give us contentment and we care not who invents perpetual motion.

The first time a young man falls in love he doesn't land on his feet.

When a man does talk sense at least half the people don't recognize it.

Naturally, an actress thinks she's a star when she is praised to the skies.

No man ever assumes the pose of a political reformer as long as he is in office.

There ought to be a great deal of satisfaction in being good, for it cuts you out of a lot of fun.

After a man once holds a public office he is hardly ever again willing to waste time necessary for earning a living by working.

Jumping the bars is cheaper than standing in front of them.

Strange to say, too many eye-openers will close a man's eyes.

Give a man string enough and he'll construct his own tangle.

There isn't much good in the man who can see no good in others.

One way to go broke in a hurry is by attempting to get rich quick.

Did it ever occur to you that nearly all of your mistakes are self-made?

Perhaps platonic love by any other name would give rise to just as much gossip.

A breach of promise suit is bad, but the same girl as a wife might have been worse.

Occasionally a candidate fails to discover which side of the fence he is on until he falls off.

As you travel in the smoking car of life you will notice a lot of men who merely chew stubs.

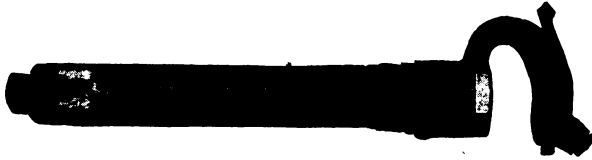
No, Cordelia, your husband's brain fag is probably not due to thinking of you while you were away during the summer.

Every mother dreams that her son may be president some day, but she would be awfully surprised if her dream were to come true.



# Safety First In Riveting

**Is possible with the BOYER HAMMER  
when fitted with M. S. Tool Holder or  
Piston Retaining Wall.**



With the SAFETY you get the Power, the Speed, the Durability, that have characterized the BOYER HAMMER since it first proved that pneumatic riveting was a success.

There are some things you do not get with a BOYER HAMMER.

You do NOT get a vibration that shakes loose the very bones of the operator.

You do NOT get a hammer that works fine for a month and then falls down.

You do NOT get a hammer that seems to prefer the repair shop to its proper place in the hands of a skillful workman.

**Bulletin No. 124 is the Hammer Bulletin  
Better get it and look it over**

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# IDEAL POWER

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By THE IDEAL POWER PUBLISHING COMPANY  
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JUNE, 1913.

No. 3.

## Safety First—A Plea for the Screw Spike

The question of safety in railroad travel is a relative one—to be discussed only with reference to some accepted standard. We know the injury and death records of the American railroads. It is bad, and recent accidents have not made it better. For comparison's sake, turn to the statistics of accidents on the railways of the United Kingdom, published by the British Board of Trade, says J. Bernard Walker in Hearst's Magazine.

For the year 1908, the American Interstate Commerce Commission reports that the number of passengers killed in train accidents was 165. The British board reports passengers killed—none.

Furthermore, in that year in England only 283 passengers were injured in train accidents, only six employees killed, only 164 employes injured.

In America!—7,430 passengers were injured; 642 employes were killed, and 6,818 employes were injured.

One more point: since the English trains for that year carried one billion, five hundred million passengers over 25,000 miles of road, while in America trains carried just eight hundred and seventy-five million passengers over 230,000 miles of road. English traffic per mile

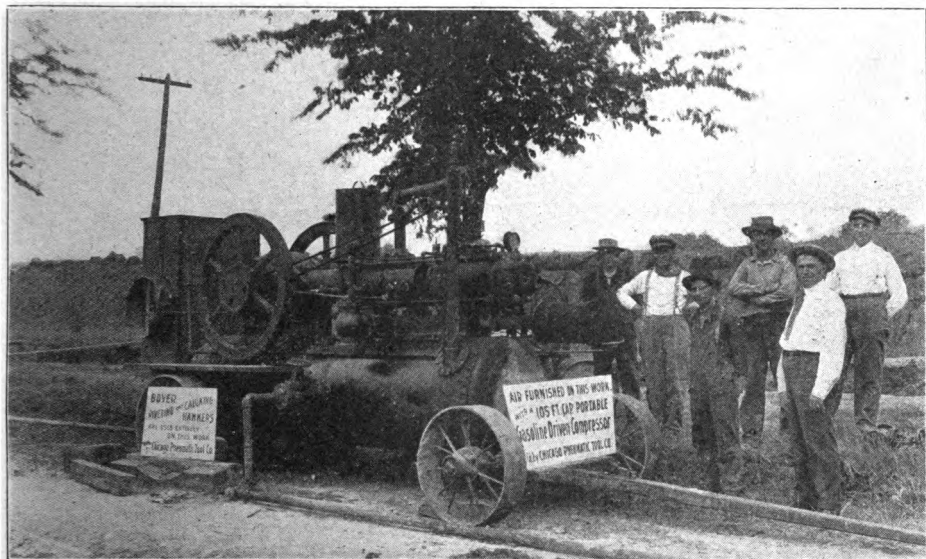
of road was proportionately denser and risk of collision and other accidents so vastly greater. Yet the record stands: America, killed—807; Britain, killed—6.

Mr. Walker's analysis of the problem is interesting, but we can only touch upon it here. The cause of this wide disparity of the safety of railroad travel between America and England lies fundamentally in the greater regard for the value of human life which characterizes the older nations of Europe. This applies not only to more careful training on the part of the employer but in greater care and attention directed to the road bed.

Two remedies are suggested. One refers to the improvement in system and discipline on the part of the employe; the other refers to the construction of the roadbed.

Reform, says Mr. Walker, must be sought also in the general improvement of track and rolling-stock, and in the adoption of additional automatic safeguards in the operation of the trains. If proof be sought of the faulty condition of much of the roadbed and rolling-stock, it can be found in the last report of the Commission, which shows that





as an additional distribution feeder connecting into the system at several vital points to increase the service pressures—especially during the hours of maximum consumption of water.

For these lines steel pipe is used having an ultimate tensile strength of from 52,000 to 62,000 pounds per square inch.

The pipe is of the Lock Bar type, and is made up in sections thirty feet in length. This kind of pipe was adopted for economy in thickness of metal and carrying capacity.

The pipe for the 48-inch distribution lines is five-sixteenths inch thick. The pipe for the 54-inch force is five-sixteenths and three-eighths inch thick—depending on the working head on the pipe at the upper and lower portions.

The pipe is made up in truncated sections and assembled in the trench by telescoping. The joint is made up by a single row of rivets and the plates calked inside and outside.

The rivet holes are centered by drifting and bolting when the pipe is laid, and trued up by reaming. The rivets are driven and joints calked by the use of compressed air.

A "Chicago Pneumatic" portable gasoline driven air compressor is used for furnishing the air power on the work.

This compressor has a capacity of 105 cubic feet of air per minute at 100 pounds pressure.

The air is distributed along the trench through 1,000 feet of two-inch pipe, having outlets spaced at suitable intervals for hose connections. Armored air hose is run from the main to the air tools. Boyer air hammers are used for riveting and calking the pipe.

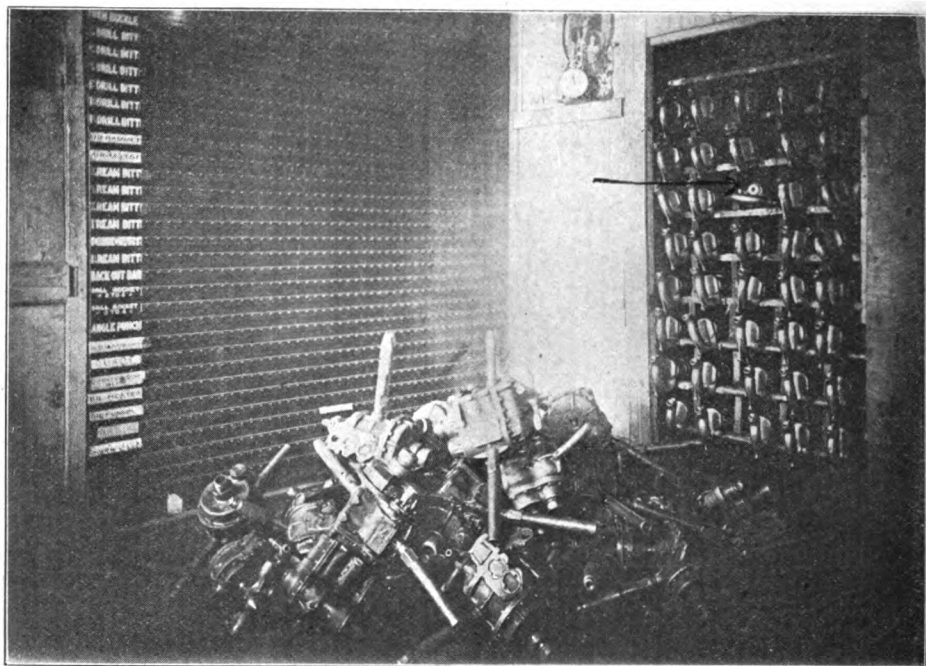
The lower rivets are driven on the inside and the upper rivets on the outside. The reaming is done by a Little Giant air drill.

Three riveting hammers, one calking hammer, and one air motor are used simultaneously on the work.

Sections of the distribution pipe and the compressor are moved ahead at intervals, and the work progresses without interruption.

### Mother's Way.

A friend of mine, a teacher, had just received a very handsome fan, and took it to the class room for the edification of the children. Selecting one of the pupils, she asked what the lovely thing was. The child did not know. "What does your mother use to keep her cool in summer?" asked the teacher. "Beer," was the reply.



### A Good Example for Pneumatic Tool Users.

This photo represents a corner in tool room of steel car repair plant on one of the largest roads in the South where Boyer Long Stroke riveting hammers and Little Giant Drills are used exclusively. The arrow points to the only stranger in the lot, which never goes out of tool room. This is accounted for by reason of the fact that the car repairers here are piece workers, and very naturally insist upon having the hammer that produces the most work. This photo was taken just after the usual weekly bath and are all ready for Monday morning's whistle.

Incidentally this suggests how pneumatic tools should be cared for, and how much they appreciate a bath and a rest over Sunday.

### Sawing Steel With Hunter Saws.

In a recent endurance test of a 40-inch Hunter Duplex Inserted Tooth Saw, the following speeds were obtained, the lateral feeds in each case as shown having been adopted as standard for Hunter saws:

Lateral  
feed per  
minute.

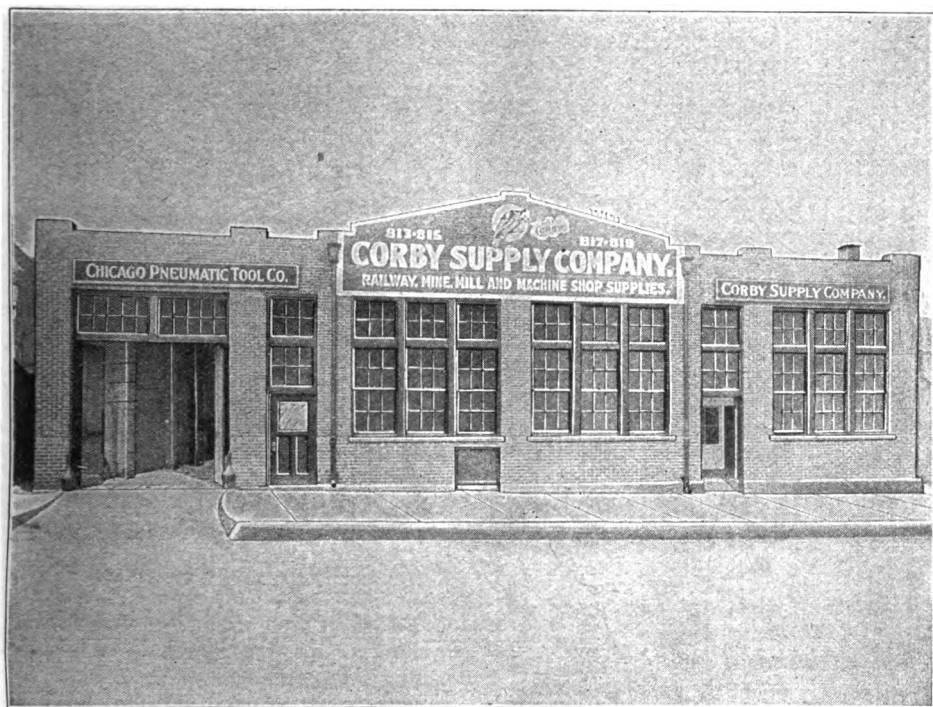
12	-in. round cut in 5 minutes....	1 1/4	inches
9	-in. round cut in 3 minutes....	1 3/4	inches
6 1/2	-in. round cut in 1 min. 30 sec....	1 1/2	inches
6	-in. round cut in 1 min. 22 sec....	1 1/2	inches
5	-in. round cut in 1 minute....	2	inches
3 1/2	-in. round cut in 35 seconds....	2	inches

The test was made on .45 carbon hammered round bars of machinery steel.

The body of the Hunter blade is made of the very best grade of Vanadium alloy tool steel, while the teeth are made of the finest grade of high speed steel obtainable for metal cutting and are properly hardened and treated.

The teeth are secured by interchangeable tool steel wedges, lowered to brass screws so as to have each tooth properly adjusted. It has a greater number of teeth than any other blade of the same diameter on the market, which is a decided advantage in cutting the smaller as well as the larger sections.

If you have bars, forgings, steel castings, rails, frogs or switches to cut, we suggest that you correspond with the Hunter Saw and Machine Co., Pittsburgh, Pa., from whom prices and information may be obtained on request.



### Corby Supply Co. Move Into Their New Building.

The Corby Supply Company, representing the Chicago Pneumatic Tool Co. in Missouri, Kansas, Oklahoma, Arkansas, eastern half of Texas and the northern half of Louisiana, and the cities in Illinois adjacent to St. Louis, have just moved their headquarters for their supply business to their own new building, 813-15-17-19 Hempstead street, St. Louis, where with the improved location and facilities they are better equipped than ever to handle their growing business for compressed air machinery, tools, and other supplies. See page 131.

The dimensions of their new building are 75 feet front by 125 feet deep by 25 feet high, with a driveway extending from front to back of building, one jib and two traveling cranes, whereby they can handle all kinds of heavy machinery and place them where they want them, with the least effort.

The office in keeping with the up-to-

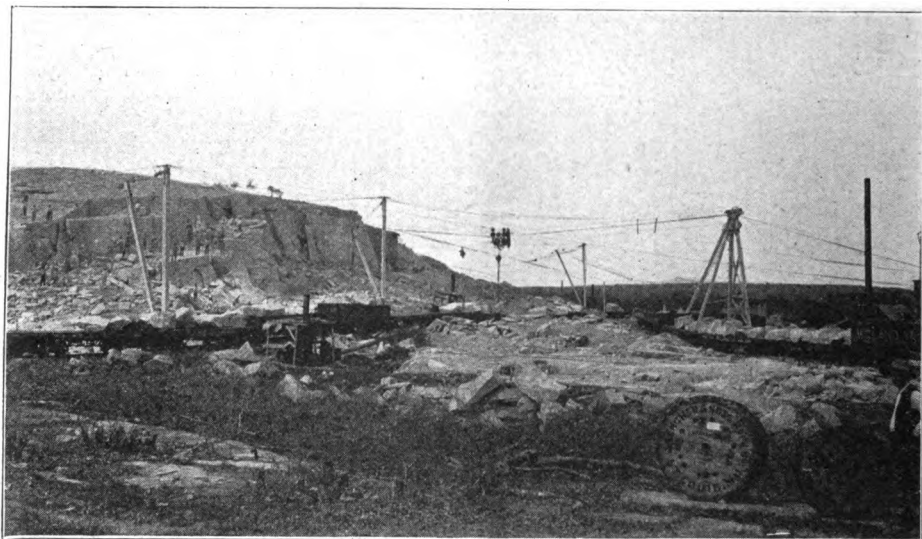
dateness of the building, has been finished in white enameled brick.

Owing to the increased demand for the "Little Giant" trucks in the state of Missouri, they will maintain their old location, 1822-24 Locust street, which is in the heart of the automobile district, devoting this building to the "Little Giant" truck exclusively, where they will carry a stock of all patterns, and maintain a complete service station.

### Knowledge Is Power.

Education is the knowledge of how to use the whole of oneself. Men are often like knives with many blades; they know how to open one and only one; all the rest are buried in the handle, and they are no better than they would have been if they had been made with but one blade. Many men use but one or two faculties out of the score with which they are endowed. A man is educated who knows how to make a tool of every faculty, how to open it, how to keep it sharp, and how to apply it to all practical purposes.—Beecher.





### Removing a Mountain of Granite.

This shows the plant and quarry of the Darragh Bros. Quarrying Company, Granite Mountain, Burnet County, Tex.

The view was taken from the southeast point of the mountain looking north. The mountain covers an area of 180 acres and highest point is 200 feet above the level of railroad tracks shown in view. The narrowest point is under cableway. The end of top ledge has been quarried for some distance, and work is now progressing on the second ledge, advancing the end for guy derricks. The face is 800 feet long and average height about 35 feet in two ledges. Over three million tons have been quarried for jetty construction on the Gulf Coast and the seawall at Galveston, and much of it has also been used for public buildings, the most notable being the state capitol building at Austin.

The method of quarrying is to use tripod drills for deep holes, breaking up from main ledges into twenty to thirty ton blocks and then plug drilling into size which on present contract is from one and one-half ton to ten ton pieces. Equipment is all rigged to handle twenty tons, but ten tons is the average load.

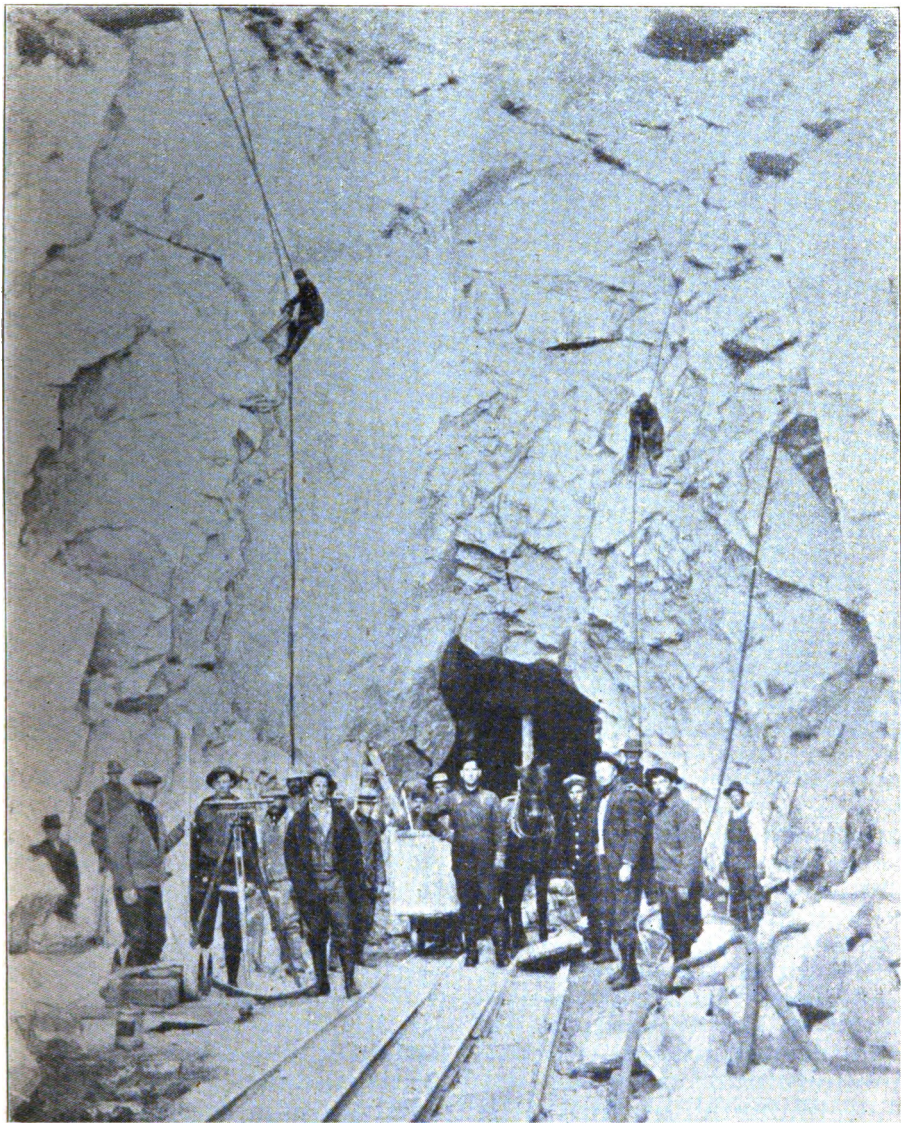
The compressed air plant consists of "Chicago Pneumatic" 14x11 G. D. S. C.

type compressors and one 8x8 G. S. S. type. The former has now been in service for about five years and has given complete satisfaction. Repairs have cost practically nothing and it is still delivering the goods every day. The smaller compressor is used on the far end of working, as there was ample steam and it was thought more economical to install small compressor than to pipe air from the large one. The small compressor will run three plug drills and like the large one has been most satisfactory.

---

### The Cheerful Man.

We love the man with a smile, the man who sees your boy's dirty face, but mentions his bright eyes; who notices your shabby coat but praises your studious and industrious habits; the man who sees all the faults, but whose tongue is quick to praise and slow to blame. We like to meet a man whose smile will light up dreariness, whose voice is full of the music of the birds, whose handshake is an inspiration, and his "God bless you" a benediction. He makes us forget our troubles as the raven's dismal croak is forgotten when the wood thrush or the brown thrush is singing. God bless men of cheer.



Men suspended by ropes while drilling "plug holes" with Chicago Plug Drills, trimming up the face preparatory to building the gate house at the entrance portal of the mile tunnel running

from the reservoir to the top of No. 1 penstock of the Big Creek Hydro-electric plant of the Pacific Light and Power Corporation; Stone & Webster Construction Co., Engineers and Contractors.

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#### She Caught Him.

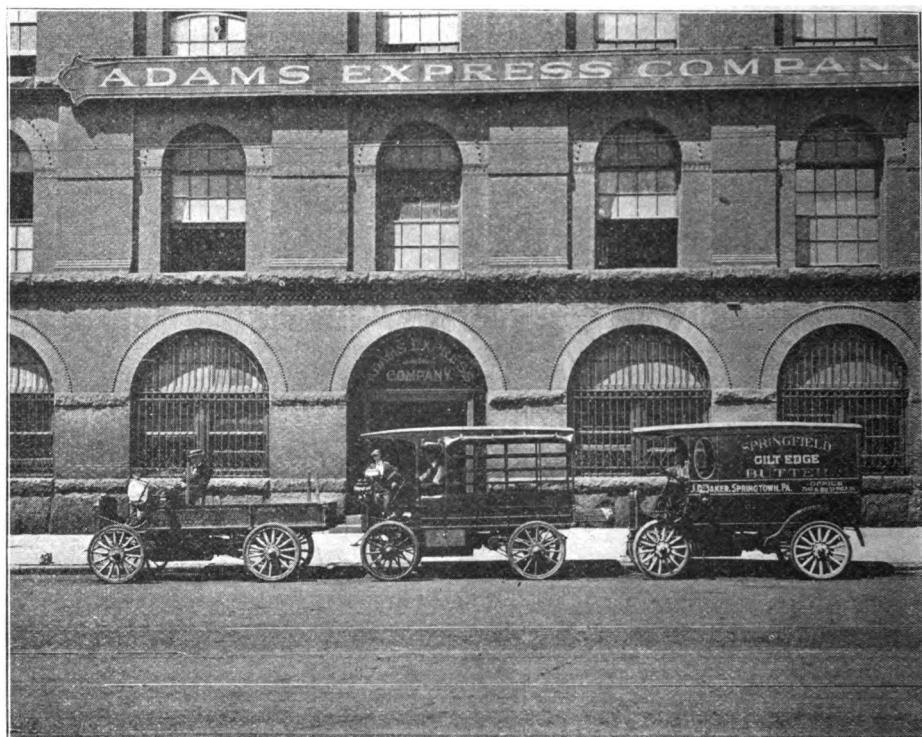
The young girl confronted him with flashing eyes.

"What did you mean," she demanded, "by kissing me as I lay asleep in the

hammock this morning?"

"But," protested the youth, "I only took one."

"You did not. I counted at least seven before I awoke."—Ladies' Home Journal.



### The Little Giant in Philadelphia.

"The above is a photograph of three Little Giants that have what we consider enviable records," says G. A. Barden, Philadelphia manager of the Chicago Pneumatic Tool Co.

The first one in the line is owned by Mr. Matthew Morrison of 2208 N. Howard street, Philadelphia, and was second hand when he bought it. The car has been in service every day since Mr. Morrison bought it, over a year ago, and last Wednesday, July 16, came in for his first repair or replacement—a new pair of chains.

The second one is owned by Mr. H. Frech of Collingswood, N. J. This car was bought by Mr. Frech over two years ago, and is one of the hardest worked cars in New Jersey. Mr. Frech's repair bill for the time he has had the car has been \$21.

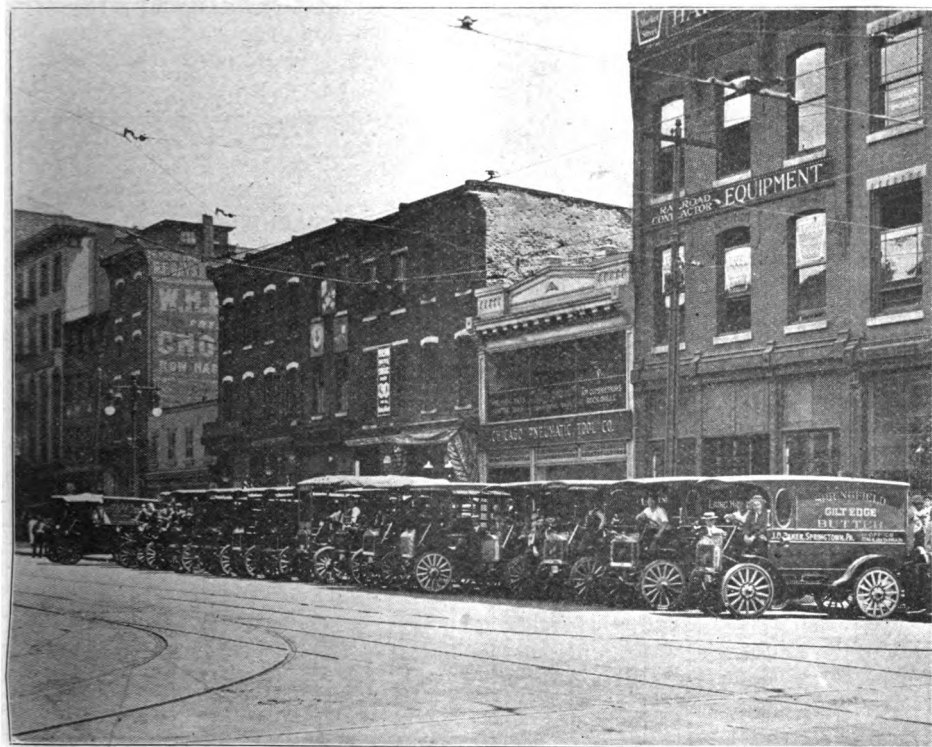
The third car is owned by Mr. John D. Baker, 2540 N. 8th street, Philadelphia. Mr. Baker's was the first Little

Giant put in service in this city, and to-day is running as well as the day he bought it; at the same time is still one of the nicest looking cars in town. Mr. Baker has taken excellent care of his car and it certainly shows it.

There is one other car here in Philadelphia I should have liked to have had in this picture, owned by Mr. T. Gaffney, 5110 Lancaster avenue, but Mr. Gaffney was delayed and could not get downtown in time.

This gentleman is a caterer and his car is in service seven days a week, and about every night as well. It probably covers more miles than any truck in the city. The only time it has been out of service is the time it was hit by a six-cylinder touring car. Mr. Gaffney was crossing Market street when the touring car hit him and proceeded to wrap (and "wrap" just about describes it) the car around an elevated railroad pillar. We "unwrapped" it and towed it in crab





fashion, fixed it up and it is today working just as hard as ever.

We are naturally proud of the record of these Little Giants, although we have others in service here that if they keep on at their present rate will equal the records of the above cars. It merely goes to show what a sturdy car the Little Giant is.

#### "Little Giants" Pose for the Photographer.

The accompanying picture of the Little Giant one-ton trucks in use in Philadelphia was taken in front of the Chicago Pneumatic Tool Company's new headquarters, 1740-42 Market street, where they moved a short time ago from 716 Arch street.

"A field where we have been very successful with our Little Giant," says Mr. Barden, Philadelphia manager, "is among the contractors and builders, plumbers, carpenters and painters. The saving effected by these men by the use of a light motor truck in transporting men from job to job,

carrying supplies and tools, is surprisingly great. We have sold a good many of our long chassis trucks for this purpose, as it gives them a good long body for carrying bulky material such as pipe, lumber, etc.

"We had a very good illustration the other day of the way these trucks save time and money. A firm who have one of our trucks had a telephone message from a job on the outskirts of the city that their entire crew was idle due to the non-delivery of certain material; in forty-five minutes from the time this message was received the material was on the ground and the men at work again. If it had to be hauled by wagon it would have taken at least an hour and three-quarters. This meant a clear saving of one hour for each man on the job, which in this case was a total of nineteen hours' time."

There was a young man from Savannah,  
Who slipped on a vacant banana.

The words that he said

When he fell on his head  
Wouldn't do for a Sunday school banner.

# IDEAL POWER

PUBLISHED MONTHLY  
In the Interest of Compressed Air  
and Electrical Appliances

BY THE  
**IDEAL POWER PUBLISHING CO.**  
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C. I. HENRIKSON Editor

Vol. 10. AUGUST, 1913. No. 5.

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Send 25 cents and have your name put on our  
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## American Boiler Manufacturers' Convention.

The twenty-fifth annual convention of the American Boiler Manufacturers' Association will meet in Cleveland, September 1st to 4th, 1913.

The headquarters of the convention will be the Hollenden Hotel, where large commodious rooms have been assigned to the association for their meetings and committee rooms.

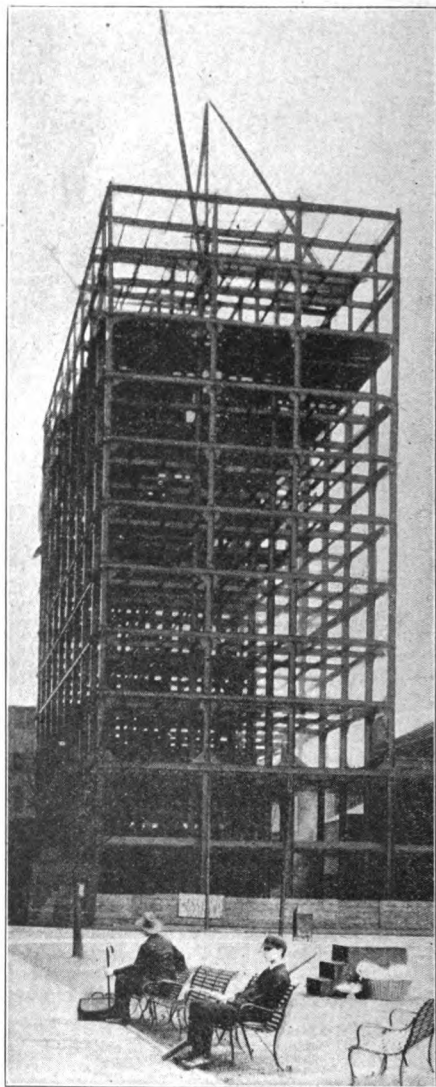
A number of prominent speakers have been notified to address the meeting and present papers. The particular feature of the convention, however, will be the final report and adoption of uniform boiler specifications of the United States and Canada.

Great interest has been taken in the coming convention by members of local boiler manufacturers' associations, and a large attendance is looked forward to, and as all boiler manufacturers and users of plate steel are invited to attend, whether members or not, the convention will doubtless be the largest and most interesting meeting in the annals of the association.

The local committee has provided a program of entertainment for the visiting ladies, and an excursion on the lake on Wednesday, September 3d, for the members and guests.

The convention will conclude with a banquet Thursday evening, September 4th. All manufacturers and users of

steel plate are invited to attend the convention, and reservations for rooms should be made at once.



This is the new Cleveland Electric Illuminating Company building, the steel work of which was erected by the T. H. Brooks Company, of Cleveland, who used four Boyer Riveting Hammers to drive the 70,000 rivets used in its construction.

### Some Observations on Ice Cutting.

By C. I. HENRIKSON.

There is a right way to do a thing, and there is a wrong way to do it, and there is a right way and a wrong way to cut ice. Many people believe they understand the subject; some cherish the idea that they cut a little once in a while; the truth of the matter is, few if any of us cut any at all. Of those that cut any ice at all, only one-tenth of 1 per cent of them require storage facilities. The other 99 per cent and the other nine-tenths of 1 per cent, well—forget it.

Cutting ice is no plebeian job. Kings, presidents, politicians, captains of industry, society matrons measure their own value by the ice they think they cut, but the evidence of their ice cutting has generally melted and evaporated before the historians begin to write up their notes.

Cutting ice is one of the oldest of occupations. Adam cut considerable on account of being the first man, but he is the only man that ever had that distinction. He would have cut more ice than he did had he not slipped and fallen.

Ice cutting is a dangerous occupation, and ice cutters should carry oblivion insurance. The rates now are one dollar per hundred.

Never try to cut ice with a hand saw if the ice is thin and if you are far from shore. The grappling hooks they use these days muss one up so, and remember the barbs that lead to Davy's Locker all point down.

The season for ice cutting begins bright and early New Year's morning and lasts until New Year's Eve. Birth and death are its only limits, but some of us ought to be excused for not cutting any until we get our first pair of boots.

Some people cut a chunk of ice occasionally, but they do not seem to be able to dispose of it—to get away with it. It melts before they can let go of it, and they get wet feet. That means change of socks and change of luck. Then new ice fields have to be sought. They who have mastered the rudiments of the art of ice cutting can well afford to read

that touching story entitled, "Now that we have it, what shall we do with it?"—written by the American father-in-law of the Duke de Humbug.

How few there are who know how ice is cut. People travel abroad, they go on the stage, they get divorced, they get their names in the papers, they do everything and anything, but they can't cut ice.

They put on fine clothes, they drop their r's, they suffer ankylosis of the spinal vertebrae, but they can't cut ice.

They don't know how to carve the pure white cubes out of the bosom of Nature and store them away where they will keep and be a perpetual source of comfort and refreshment to themselves and all mankind.

You may not know it, but you got your best ice-cutting lessons when you were a boy in the little town where winter monopolized six months of the year. When you had to break the ice on the rain water barrel with a stick of stove wood in order to dip out a wash basin full for your morning's bath; when you had to pour a kettle full of boiling water down the frozen throat of the old pump before she would consent to cough up; when the woodshed had to be re-discovered with a snow shovel every time the weather man got sore; these were your first lessons in practical ice cutting. Have you forgotten them?

People who don't know how to cut ice at home seldom are good ice cutters in business or in society. You see, ice cutting, like charity, begins at home. Your mother and your dad wanted you to be an ice cutter when they insisted on your doing the common things in life in the healthiest, wholesomest and most economical way they knew how. Every time you did something to make them feel proud of you, they saw visions of your cutting lots of ice some day. But did you make good? Whether you did or not, the chances are they look on you, as you stand there insignificant enough, as one of the leading ice cutters of the age.

Some unprincipled ice cutters try to

slip it over on their friends and acquaintances by cutting artificial ice. Look out for them. Artificial ice has a certain sameness of dimensions, a certain sponginess of center, and a certain flatness in flavor that shouldn't fool you if you are wide awake.

I believe the Lord intended that all should have opportunities to cut ice. How else do you account for his giving it to the poor in winter and to the rich in summer?

The unselfishness of certified ice cutters may be observed should you find yourself in their midst, and discover to your chagrin that you left your union card at home. They immediately join hands and create an atmosphere so frigid that you may begin ice cutting on the spot.

Some people would cut more ice than they do, if they knew where to cut it. There is no ice in ball rooms except the little cubes that jangle in the cut glass ice pitchers, yet many people lease the largest ice houses in the neighborhood in which to store the ice they expect to cut when the grand march turns them loose. There is no ice in the pit of a theater except what the colored girls bring you between the acts, yet many people so burden themselves with ice cutting implements that they are unable to reach their seats in the boxes until the curtain goes up on the second act. There is no ice on the boulevards, yet people disguise their deputy ice cutters as chauffeurs and ride up and down in limousines bigger than ice wagons.

The wages of real ice cutters are not paid in dollars and cents. The ice cutting they do is merely a by-product of work done with clean hands—deeds that count, achievements that fathers and mothers tell their children about. Nor do real ice cutters send statements every month to Providence with reminders of His delinquency.

The fact is, the best ice cutters are found in the old-fashioned homes where children are taught to respect their elders and where love—the old-fashioned kind, that teaches us to be useful as well as

ornamental—holds continuous session. You will find real ice cutters in hospitals where fevered brows and parched lips invite the soothing, helping hand. You will find them on the by-ways where the sun seldom shines, where poverty and sorrow have left their crushing burdens on shoulders too weak to bear them.

You will find them in the workshops, shaping ideals along with machinery, pointing out to the laborer and the apprentice the powers they possess, but never dream of, and inspire them to reach up for something bigger and better.

The Order of Ice Cutters is an exclusive order but its thirty-two degrees are not conferred in secrecy. The candidate for the first degree is rowed out into a lake of clear water five miles from shore. He is ordered to stick his finger into the water and to hold it there for five minutes. A week later he is sent out alone to find the spot and see what became of the hole. On his return he is asked, "Foundest thou the spot?" and the candidate answers, "I found the spot not," and he has taken his first degree; and so on.

The highest degree is the thirty-second degree of temperature. Ice melts at 32 degrees, which teaches us that the opportunities for cutting ice are greater in the lower ranks of the order.

Alcohol never freezes; so it is hard to cut ice on Booze Bay or Whiskey Lake.

After all, what's the use? Only few of us will have any to cut in the world to come.

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#### In Vodeville.

Slap—Bought a car.

Stick—Did? What kind?

Slap—Self-starter.

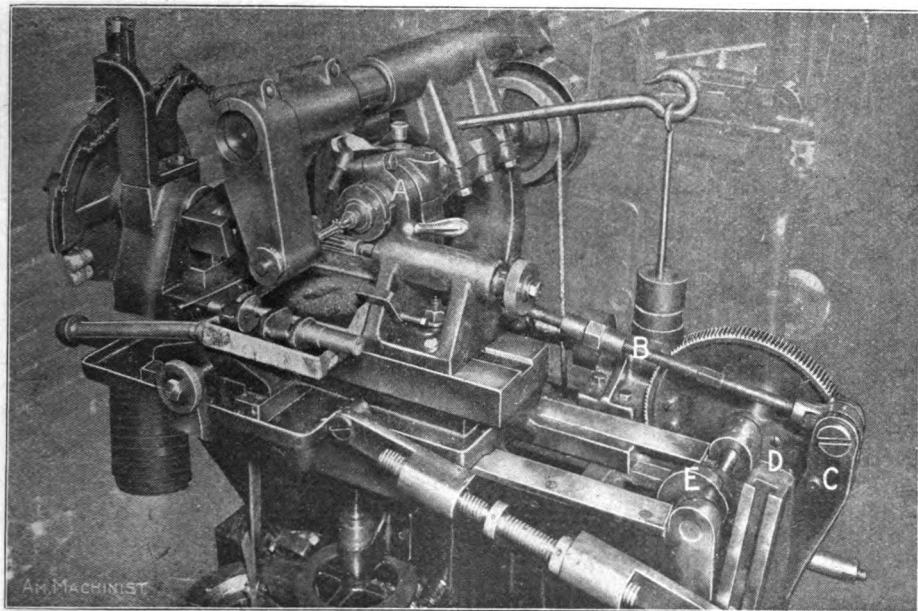
Stick—Gotcha beat. Mine's a self-stopper.

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#### Heard on the Beach.

Casey (teaching Hogan to swim)—Now, kape yer mouth shut and breathe through yer nose.

Hogan—And phwat else cud a man breathe through wid his mouth shut, ye fule?—Puck.



### Making Shrouded Teeth on Little Giant Crankshafts.

An interesting operation on the crankshaft of the Little Giant drill is shown above. A Dwight Slate automatic gear cutter has been modified to suit the peculiar conditions of the work. In order to secure sufficient strength of tooth in the pinion of one of the smaller crankshafts, it was found necessary to make the teeth shrouded, this being accomplished by enlarging the diameter of the shaft bearing to the outside of the piece, and sinking the teeth below this diameter.

This gave no place for the milling cutter to run out, so that the device shown was made for automatically rolling the small milling cutter out of the way at the end of the tooth and maintaining it in this position while the work was being indexed and the cutter run back for the next cut.

This is accomplished in an ingenious manner by mounting the cutter spindle in an eccentric bushing and providing a cam which will partially rotate this bushing when the end of the cut is reached, thus raising the cutter complete-

ly out of the tooth and holding it in that position until it is ready to make the next cut.

The whole cutter spindle, together with the support for the overarm, is mounted in the eccentric bushing, and the arm A is clamped around the front bushing, the lower end of the arm being connected to the adjustable rod B, which goes back to the lever C, this lever carrying a hardened roll which is controlled by the cam D. This is fastened to the same worm wheel that controls the feed cam E, as regularly provided on the machine.

When the feed cam E has moved the carriage to the end of its stroke, a dwell is provided, during which time the cam E throws back the lever C and swings the whole cutter spindle up out of the way. The work then indexes and the carriage is returned to the starting point by the feed cam E, ready for the next tooth. In this way the shrouded teeth are cut almost as readily as when the milling cutter could run clear through.

—(American Machinist.)

See Bulletin Directory on Page 152.



### The Makings of a Good Chain Block.

Nothing so arouses the interest and admiration of a mechanical man as a piece of machinery that is a labor saver, well designed and well made. Such a combination is found in the Reading Multiple Gear Chain block. The parts entering into this block are as carefully made as the parts of a watch. All spur gears and pinions are cut from solid steel blanks. The shaft and pinion gear is one piece cut from a solid bar. All working parts are enclosed in a dust proof, air tight case and operate in a bath of oil. Reading chain blocks hoist quickly and easily and one man can do three times the work with a Reading that three men can do with a differential block. Prices and data may be obtained by addressing the Reading Chain Block Co., Reading, Pa., or the Chicago Pneumatic Tool Co.

### The New Art.

Exercising in bed having come into vogue, we suggest the following as being among the latest movements, says Life:

No. 1. With a deft movement of both forearms, roll the blankets, eiderdown quilts and sheets into a neat, but not too gaudy, ball. Toss this up in the air and catch it lightly upon the soles of the feet. Do this ten times the first morning, adding five each morning.

No. 2. Lie prone upon the stomach and grab the mattress firmly in the teeth; move the head backward. By practicing this motion for a week you will be able to improve the muscles of the shoulder blades.

No. 3. Get under the bed and, lifting it lightly upon the shoulders, walk around the block three times. If you are living near a public square, increase your journey every day until you have compassed the square.

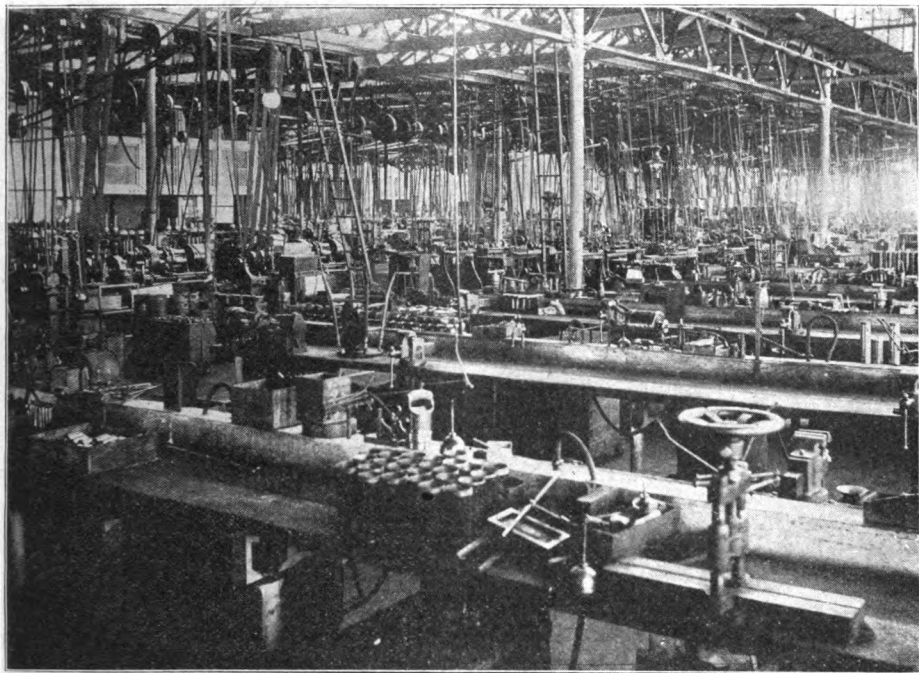
No. 4. Be sure and have two mattresses to your bed, and occasionally sleep between them. The upper mattress should be rather heavy. It presses out the muscles and stomach and prevents you from getting fat in case you have a tendency that way.

Above all things do nothing violently!

### Johnnie Has a Motorcycle to Trade.

Dear Sers: I is got a Injun motor sickel and I wants to no if you trades any. A feller up hear has a Harlum Davy motor sickel and it is sure a wing-dingler when it comes to gitting over the sod and sometimes under it. Mine was a new one about fore years ago but don't run good any more. A feller up hear that works in a sawmill toll me that the suxion rod was hittin' on the spark box. He said he fixed it and it don't run no better ever since. Then I write to a man in Allentown and he said the transmogrifier was feeding to fast and the flubicator wasn't working in time with the electrobumper so I cut six inches out of the belt so the hine whel won't turn so fast. Don't run no better yet. Yesterday a young doctor said, Jonnie, why don't you hop the goll darn thing and I hopped on and off it for mighty neer nine miles and when I got backe home Pa took it and lock it up in the barn and said you will kill yourself. The folks up hear say if I had one of those Harlum Davy machines I could wide as fast as them racing fellers who gits big money and that is what I wants to do. I reeds all about them races you have in Utah. I heerd a feller say once his machine sure did run sweat so I put some m'lasses in my gaslen and I had to take the muffler off to get the candy out.

I kno you could git a big prise for mine as I had Bob Fox paint it red just like a Harlum Davey and I won't tell nobody who I sell it to and then they don't no who it was that I had do it. I'm coming down to the fare and I will see you about tradin. I ain't goin to give you no boot. I didn't tell you that the front tire hain't been on it for more than two years and the hine whel has got wrope roun it for a tire. Pa cut a big gash in the belt trying to sharpen his razor but that don't hurt cause it don't run. The feller that had it use to have a clock on it so's to tell how fast he was goin but I don't need this as it don't go no faster than I can push it so I will thro this in if we trade any. I



Assembling Dept., Detroit Plant, Chicago Pneumatic Tool Co. (Machinery Hall in Rear.)

am goin to do somethin with it cause ma just said it was no good even for her chickens to roost on at nite. Gosh, that made me mad. If you want to trade let me kno.

Johnnie Skiner.

—Gas Review.

#### A Sherlockette.

"My wife kisses me evenings when I get home late."

"Affection?"

"No; investigation."

#### He Became a Salesman.

Merchant—Aren't you the boy who was in here a week ago?

Applicant—Yes, sir.

Merchant—I thought so. And didn't I tell you then that I wanted an older boy?

Applicant—Yes, sir; that's why I'm here now.

#### Heinie.

Henry's mother, a good old German woman, calls him "Heinie." Together one day, they entered a store to purchase "Heinie" a hat.

The polite clerk sized up "Heinie" and asked his mother just what kind of hat she wanted for him—

"A straw hat, some kind of novelty, or fedora?"

"Nein," responded "Heinie's" mother, "nicht for Dora—for 'Heinie.'"

#### Which?

"Remember, Bridget," said the lady to the new maid, "there are just two things I insist upon: truthfulness and obedience."

"Yis, mum," said Bridget, "and phen yez tell me to tell the callers that yer out whin yer in, which shall it be, mum, truthfulness or obedience?"

See Bulletin Directory on Page 152.

### Some Piano Playing.

"I was loitering around the streets one night," said Jim Nelson, an old engine driver. "As I had nothing to do, I dropped into a concert hall and heard a sleek-looking Frenchman play a piano in a way that made me feel all over spots. As soon as he sat down on the stool I knew by the way he handled himself that he understood the machine he was running.

"He tapped the keys up on end, just as if they were gauges, and he wanted to see if he had water enough. Then he looked up as if he wanted to see how much steam he was carrying, and the next moment he pulled open the throttle and sailed on to the main line as if he was half an hour late.

"You could hear her thunder over culverts and bridges and getting faster and faster, until the fellow rocked about in his seat like a cradle. Somehow I thought it was old '36' pulling a passenger train and getting out of the way of a 'special.' The fellow worked the keys of the middle division like lightning, and then he flew along the north end of the line until the drivers went around like a buzz-saw and I got excited.

"About the time I was fixing to tell him to cut off a little he kicked the dampers under the machine wide open, pulled the throttle way back in the tender, and how she did run! I couldn't stand it any longer, and yelled to him that he was pounding on the left side, and if he wasn't careful he'd drop his ashpan.

"But he didn't hear. No one heard me. Everything looked flying and whizzing. Telegraph poles on one side of the track looked like a row of cornstalks, the trees appeared to be a mud-bank, and all the time the exhaust of the old machine sounded like the hum of a bumblebee. I tried to yell out, but my tongue wouldn't move.

"He went around curves like a bullet, slipped an eccentric, blew out his soft plug, went down a grade fifty feet to the mile, and not a controlling brake set.

She went by the meeting point a mile and a half a minute and calling for more steam. My hair stood up straight, because I knew the game was up.

"Sure enough, dead ahead of us was the headlight of a 'special.' In a daze I heard the crash as they struck, and I saw cars shivered into atoms, people smashed and mangled and bleeding and gasping for water. I heard another crash as the French professor struck the deep keys away down on the lower end of the southern division, and then I came to my senses.

"There he was at a dead standstill, with the door of the firebox of the machine open, wiping the perspiration from his face and bowing to the people before him. If I live to be one thousand years old I'll never forget the ride that Frenchman gave me on the piano."—*Australian Musical News.*

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### A Nimrod of the Tenement.

A certain Irishman living in New York owns a number of tenement houses on the East Side in the Jewish district. One day one of his tenants, a little, short, wizened up Jew, called at his office to make a complaint.

"I tell you, Mister Murphy, I am goin' to leave it your flat."

"Sure, now," answered Murphy, "and what is the trouble?"

"Vell, I tell you dere's too many rats in dot flat. Vy only yesterday I kills eight!"

Murphy jumped to his feet in anger, and bellowed forth: "An' 'tis rats, is it, that is bothering ye? You lave thim rats alone! What do you want for eight dollars a month? Huntin' privileges?"

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### A Snap.

Go—What is Simpson doing now?

Fish—Oh, he's traveling with a menagerie.

Go—Pretty hard work, isn't it?

Fish—Hard work? No; he's nothing to do except stick his head into a lion's mouth twice a day.



It takes a woman to believe things that are unbelievable.

No, Cordelia, the game of bridge is not always a walkover.

Some men never brace up because they take too many bracers.

Most of our relatives are about as useless to us as empty tomato cans.

It's easy for a sympathetic woman to make any man believe he loves her.

Satan gets so much fun out of his business that he doesn't want a vacation.

A square deal is all a man wants—but he wants to be the judge of its squareness.

Unless a man possesses some wisdom he will never be able to realize what a fool he is.

Fortunate is the married couple who occupy a house in which there is no room for doubt.

In case you fail to put your best foot forward when you have a chance you may feel like using it to kick yourself later.

Any girl will cheerfully give up a dollar to a fortune teller in exchange for the information that she is going to be married within a year.

You'll never have good neighbors unless you are one.

And a lot of modesty is only skin deep.

Hope deferred has given many a man cold feet.

Death is the nurse who will one day put us to sleep.

If you have too much money you can easily acquire more.

One good turndown may eliminate the necessity for another.

When a girl is hard to please she is seldom worth the trouble.

A man is all right in his way as long as he keeps out of your way.

Second thoughts are sometimes best in a case of love at first sight.

A girl's troubles soon cease to worry her after she tells them to her mother.

If a man's heart is in his work he does a good job. Some men need a change of heart.

What has become of the old-fashioned woman who used to do up her hair with a doorknob twist?

Many a man doesn't realize how small the world is until he begins trying to dodge his creditors.

It is much safer for a man to rock his own baby than it is for him to stone his neighbor's chicken's.

# BULLETIN DIRECTORY

Requests for these bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

## PNEUMATIC TOOLS

- 121... Pneumatic Rammers and Foundry Appliances.
- 124... Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125... Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 126... Compression Riveters.
- 127... Pneumatic Drills, Reamers, Wood Borers, Flue Rolling and Tapping Machinery and Grinders.
- 128... Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129... Hose, Hose Couplings and Hose Clamp Tools.
- 130... Lubrication of Pneumatic Tools.
- 131... Miscellaneous Tools, viz: Pipe Benders, Air Forge, Bolt Nipper, Drilling Stands, Blow-off Cocks, Bell Ringers, Drill Repair Vises, Painting Machines.
- 132... Pneumatic Motors and Pneumatic Geared Hoists.
- 133... Cylinder Air Hoists and Jacks.

## ELECTRIC TOOLS

- E-22.. Heavy Duty Electric Drills, Alternating Current.
- E-23.. Air Cooled Direct Current Drills.
- E-25.. Electric Hoists.
- E-26.. Universal Electric Drills.
- E-27.. Heavy Duty Electric Drills, Direct Current.
- E-28.. Duntley Track Drills.
- E-29.. Duntley Electric Grinders.

## AIR COMPRESSORS

- 34-A.. Class "G" "Chicago Pneumatic" Compressors.
- 34-B.. "Chicago Pneumatic" Power Driven Compressors.
- 34-C.. "Chicago Pneumatic" Gasoline Driven Compressors.
- 34-F.. Design and Construction Class "G" "Chicago Pneumatic" Compressors.

- 34-G.. Air Receivers, Aftercoolers, Reheaters, etc.
- 34-H.. General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-L.. General Pneumatic Engineering Information.
- 34-O.. Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-P.. Class M-CB and M-CE New Enclosed Type Self-Oiling "Chicago Pneumatic" Power Driven Compressors.
- 34-R.. Class L-SS and L-SB New Enclosed Type Self-Oiling "Chicago Pneumatic" Compressors.
- 34-T.. Class "M" Corliss Enclosed Type Self-Oiling Four Valve "Chicago Pneumatic" Steam Driven Compressors.

## ROCK DRILLS AND PLUG DRILLS

- 118.. Chicago Giant, Auxiliary Valve Rock Drill.
- 137.. Chicago Giant Rock Drill, Tappet Type.
- 138.. Chicago Giant Rock Drill Mountings.
- 139.. Chicago Giant Rock Drill Appurtenances.
- 148.. Chicago Plug Drills.

## LITTLE GIANT TRUCK

- 96.. Heart of the Little Giant Truck.
- 114.. Little Giant Chauffeur.
- 115.. Anatomy of the Little Giant.
- 134.. Comparison Horse and Wagon with Little Giant Delivery.
- 136B.. Testimony in the Case of the Little Giant vs. Other Trucks.

## ROCKFORD and MISCELLANEOUS

- 37.. Stone Carving Tools and Stone Dressers.
- 42.. Boyer Speed Recorder.
- 43.. Rockford Railway Motor Car.
- 117.. Lubrication of Rockford Cars.
- 119.. Operation of Rockford Cars.

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# IDEAL POWER

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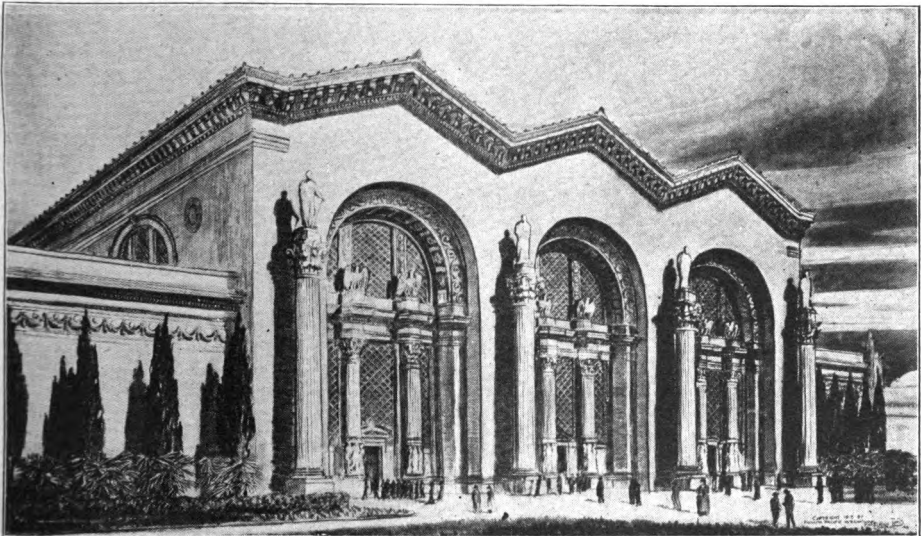
No. 6.

## Pneumatic Tools Used in the Construction of Buildings for the Panama-Pacific International Exposition

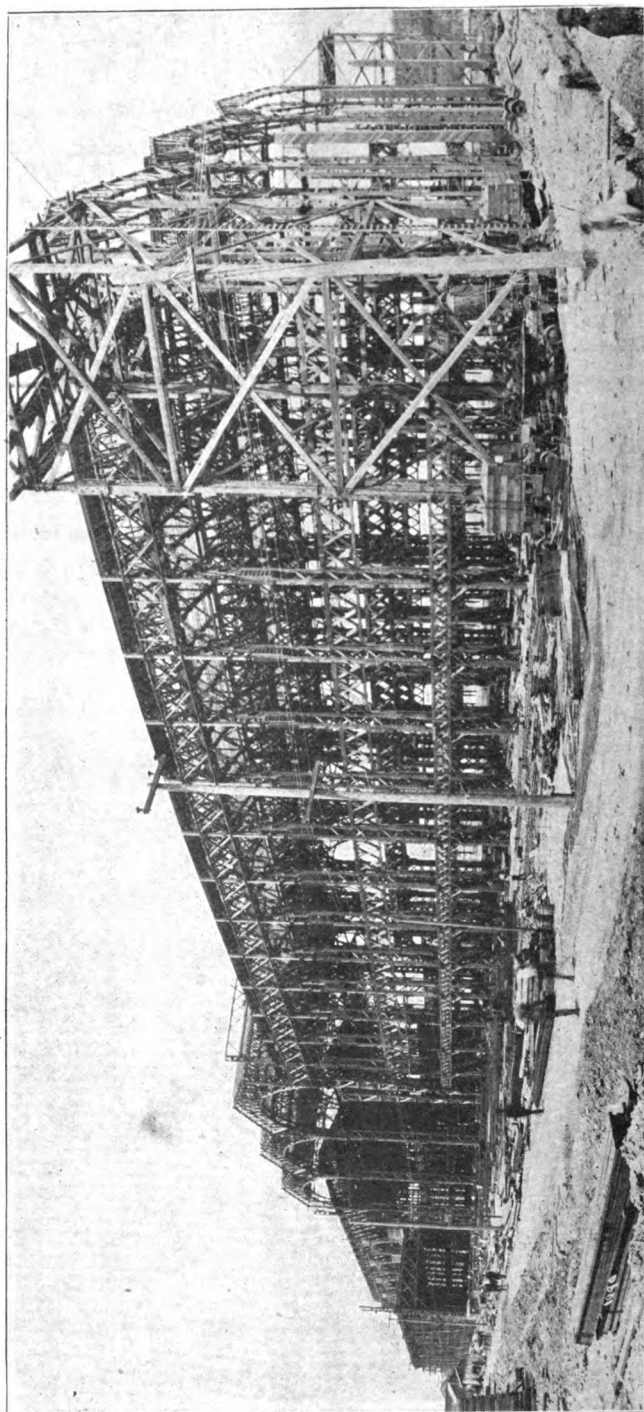
The World's Panama-Pacific International Exposition opens in 1915 at San Francisco and work on the construction of the buildings is now in full swing. The imposing facade of Machinery Hall as it will appear when completed, is shown below.

The structure will be 367.8x967.8 ft.

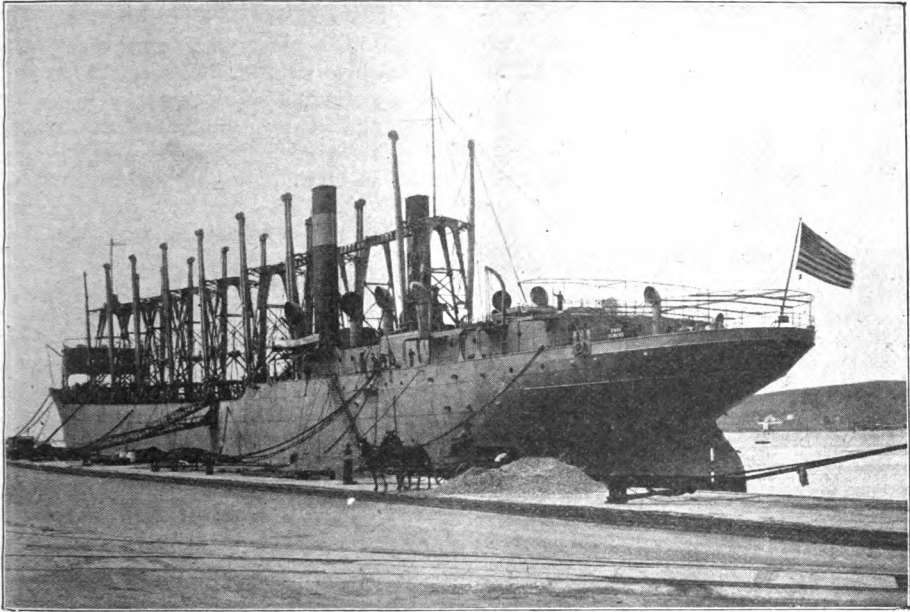
and will be decorated with more than a mile and a half of ornamental cornices. The architectural design of the building is based upon the Roman arch motif, prototypes of which may be found in the big Roman baths of Hadrian and Caracalla. The interior arrangement consists of three naves 75 ft. in width, 122







View of Machinery Hall, World's Panama Pacific International Exposition, showing three naves in centre of building.



The U. S. S. Jupiter, recently built at the Mare Island Navy Yard. The towers or uprights shown are parts of an extensive system to be used in coaling battle-ships at sea.

ft. in height and more than 900 ft. long.

The building will be completed about the first of October. The amount of lumber used to complete the building will approximate 8,000,000 ft. About 1,500 tons of bolts, rods, plates, etc., will be used. W. W. Anderson & Co., the contractors, are using 18 size "B. W." and 4 size "C. W." Little Giant Wood-boring Machines. These machines have already been in use for five months and the only repairs needed thus far consist of one piston and three throttle caps.

#### **U. S. S. Jupiter.**

The U. S. S. Jupiter, recently completed at the Mare Island navy yard, San Francisco, is the largest ship ever built on the Pacific coast. The length of the ship over all is 542 ft.; beam, 65 ft.; depth, 39 ft. 6 in.; draft, 27 ft. 6 in.; displacement, 20,000 tons; speed, 15 knots; H. P., 7,200; coal capacity, 15,000 tons; fuel oil capacity, about 875,000 gallons; approximately 5,000 tons of steel

was used in the construction of the ship, as well as 6,000,000 rivets.

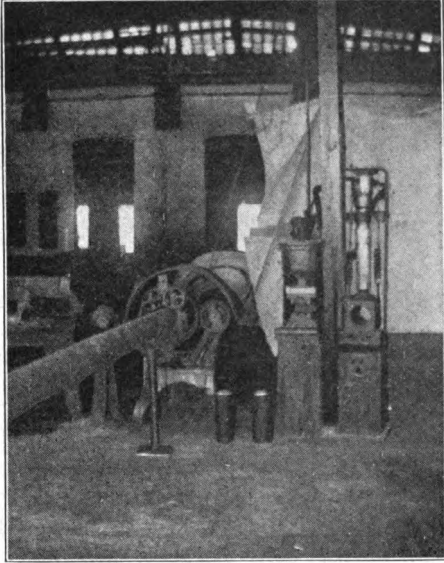
A specially interesting feature of the boat is the fact that it is the first ship on the Pacific coast to be constructed with a power plant of direct connected turbine generators. On each propeller shaft (the boat being built with twin screws) is a motor, the power to run these motors being taken direct from the generators. This feature of the ship is in the way of an experiment, the manufacturers of the power plant having donated the equipment and installed it with the understanding that they are to replace it should it not prove satisfactory.

The final trial of the "Jupiter" will take place some time this month in the Santa Barbara channel, and it is to be sincerely hoped for the benefit of the Pacific coast that the ship will be a success.

Boyer and Keller Chipping Hammers and Boyer Riveters were used exclusively in the construction of the ship.

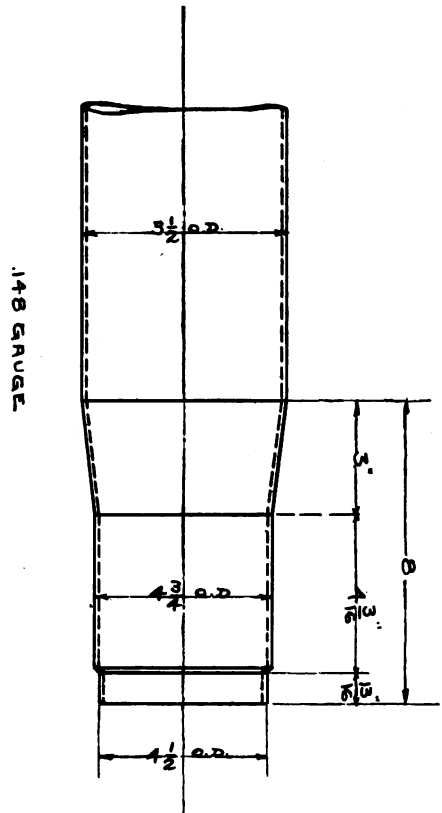
**Methods Used in Welding Superheater Flues in N. Y., N. H. & H. R. R. Shops, New Haven, Conn.**

Charles J. Baumann, foreman boiler-maker at the above mentioned shops, has sent us some photographs and sketches, with a description of the methods he has used with great success in welding and swedging superheater flues in the shops



above mentioned. The flues are removed from the boiler by the same methods as small tubes and thoroughly cleaned. The swedge end of the old tube is then cut off and is ready for welding. The oil furnace, the flaring post, roller welder and the swedging machines are arranged in a circle to permit one end of the flue to remain at rest while the other end is going through the different operations. Length of safe end, 13 inches with its welding end chamfered off about 30 degrees. The reason for applying 13 inch safe end on first application is to avoid disturbing the weld when swedging same. Flue is then fitted and safe end applied by flaring out body flue and allowing safe end to enter about  $\frac{5}{8}$  inch. As the safe end expands and the body flue contracts, the safe end is held in position for welding. Before heating, care must be taken to see that the tube

is clean, as any foreign substance will interfere with the welding process. The tube is then placed in furnace and when it reaches welding heat, it is bumped once against iron block at back of furnace and kept turning until the proper heat is reached. The roller welding machine is then applied to smooth the outside surface. A stand rest with roller is in front of the roller welder, as shown in the photo, and assists in locating mandrel when applying tube to same. After tube is welded, it is reheated to a good red heat to prepare for the final operation of swedging. This process is performed with the No. 2 Boyer rivet buster rigged up as shown in the photo. This



has proven very satisfactory and makes a very neat job. All that is required in connection with the rivet buster is a top and bottom swedge, edges between dies cut to three inch radius, with the dies  $\frac{1}{16}$  inch larger than swedge to

overcome shrinkage. A  $\frac{3}{8}$  inch coil spring is used to hold weight of top die and rivet buster about  $\frac{3}{8}$  inch apart. Two  $\frac{1}{2}$  inch pins projecting  $\frac{3}{4}$  inch above bottom die acts as guide for top swedge. Time required for swedging, 22 seconds. The advantage derived from  $5\frac{1}{2}$  inch safe end lies in the fact that three or four safe ends can be welded without interfering with the superheater units. If the flues are welded properly there is no reason why three or four swedges would be detrimental to the tubes. A general view of the furnace, the flaring post, the roller welding and swedging machine is shown in the accompanying photo. We also show a sketch with dimensions of the swedge and of one of these superheater flues.

#### Bonus System for Pneumatic Riveting.

In the course of an article on the Antelope Valley Siphon, Los Angeles Aqueduct, the "Engineering Record" has this to say about the bonus system for pneumatic riveting:

The riveting crews made good speed, due in part to the bonus system which was adopted on this work. Ten days constituted a bonus period, thus giving three bonus periods to each month. Bonus payments were allowed upon the basis of measurements made at the close of each ten-day period. Only men who had worked continuously through the ten-day period were entitled to a bonus, with the following exceptions: First, a man injured or taken sick during the periods from conditions due directly to siphon construction; second, employees transferred to other parts of the work by the superintendent in charge; third, the interruption of work due to a shortage of material or supplies, failure of power or other causes beyond the control of the men. In such cases the bonus was allowed in proportion to the shifts worked by him during the period.

The table herewith gives the schedule for siphon work for a typical riveting crew of four men.

The world's record for field-driven

rivets was made on the erection of this pipe, one man driving 1,650  $\frac{5}{8}$ -in. rivets in one eight-hour shift. Boyer air hammers were used.

#### BONUS RATE FOR RIVETING CREW.

Mechanic. Each per shift.	Size of rivet, in.	Wages, per day.	Base rate, per shift.	Crew bonus, cts. per rivet.	Per cent of bonus per man per shift.
Riveter ....	$\left\{ \begin{array}{l} \frac{5}{8} \\ \frac{3}{4} \end{array} \right\}$	\$3.50	$\left\{ \begin{array}{l} 500 \\ 400 \end{array} \right\}$	$\left\{ \begin{array}{l} 1\frac{1}{2} \\ 1\frac{1}{2} \end{array} \right\}$	30
Heater .....	$\left\{ \begin{array}{l} \frac{5}{8} \\ \frac{3}{4} \end{array} \right\}$	3.00	$\left\{ \begin{array}{l} 500 \\ 400 \end{array} \right\}$	$\left\{ \begin{array}{l} 1\frac{1}{2} \\ 1\frac{1}{2} \end{array} \right\}$	30
Bucker ....	$\left\{ \begin{array}{l} \frac{5}{8} \\ \frac{3}{4} \end{array} \right\}$	2.75	$\left\{ \begin{array}{l} 500 \\ 400 \end{array} \right\}$	$\left\{ \begin{array}{l} 1\frac{1}{2} \\ 1\frac{1}{2} \end{array} \right\}$	20
Sticker ....	$\left\{ \begin{array}{l} \frac{5}{8} \\ \frac{3}{4} \end{array} \right\}$	2.50	$\left\{ \begin{array}{l} 500 \\ 400 \end{array} \right\}$	$\left\{ \begin{array}{l} 1\frac{1}{2} \\ 1\frac{1}{2} \end{array} \right\}$	20

#### Duntley Universal Portable Electric Surface Grinder.

To meet the demand for a tool for grinding flat surfaces the Chicago Pneumatic Tool Co. have mounted their universal grinder on a carriage provided with ball casters and having an adjustment to prevent gouging into the work and at the same time to allow for the wear of the emery wheel. A spring raises the wheel off the work and an adjustable limit stop prevents its being pressed down too far into the work. This tool is especially adapted for grinding flush rivets on flat plates, or removing lumps from flat castings. Three sizes are made, known as Nos. 00, 0 and 1, and fitted for  $4x\frac{3}{4}x\frac{1}{2}$ ,  $5x1x\frac{5}{8}$  and  $6x1\frac{1}{4}x\frac{3}{4}$  emery wheels respectively. They are wound for either 120 or 240 volts.

Bulletin E-29 tells all about this and other portable electric Grinders made by the company.

#### As She Heard It.

A young lady who was inspecting bicycles said to the clerk: "What's the name of this wheel?"

"That is the 'Belvidere,'" answered the salesman.

He was rewarded by a stony glare and the icy question: "Can you recommend the Belva?"



The Burke Electric Co.'s Little Giant Truck in the Perry Centennial parade at Erie, Pa. It is shown loaded with Burke Electric Motors and with Duntley Electric Drills.

### He Became a Salesman.

"Put down," the little fellow said, reading from a book, "ten pounds of sugar at five cents a pound, and four pounds of coffee at thirty cents a pound, two pounds of butter at twenty-eight cents a pound, and two cakes of soap at five cents each."

"I've got them down," said the grocer, looking up from his pad.

"How much does it come to?" the lad asked.

The man ran up the column.

"Two thirty-six," he announced, "Hurry up, son."

"An' if I was to give you a five dollar bill how much change would I get?"

"Two dollars and sixty-four cents," said the grocer impatiently. "Come on, I'm in a hurry."

"Oh, I don't want to buy them," said the lad as he disappeared through the door. "That's our arithmetic lesson for tomorrow an' I couldn't work it.

### He Knew What He Wanted.

The difficulties of learning and using a new language are many and the unfortunate Norwegian in the story must have felt that his own efforts were particularly unsuccessful.

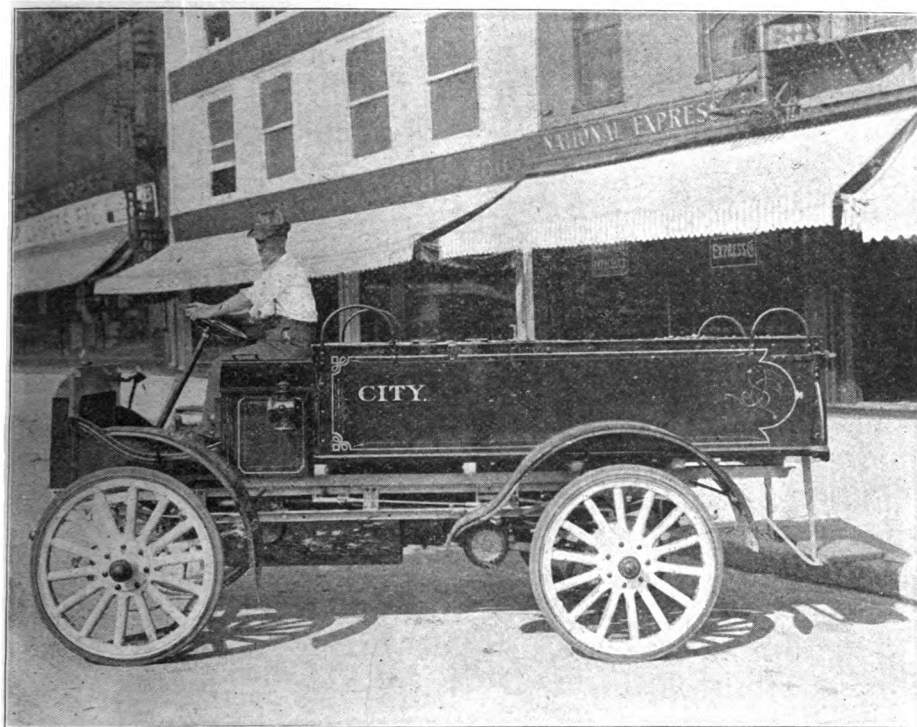
A druggist was obliged to be absent from his store one day and his wife took his place. A large Norwegian, who spoke English with difficulty, entered and said: "Hi owe de firm fifty cents."

"Very well," said the druggist's wife, "just pay it to me and it will be all right."

"Hi owe de firm fifty cents."

"Yes, I understand. If you are afraid, I will give you a receipt for it."

The man looked at her in astonishment and walked out without a word. Pretty soon he returned with a fellow countryman, whose command of English was a little better, and who interpreted his friend's remark by explaining, "He wants fifty cents' worth of iodoform."



### What Chance Has Fido Now?

There is a new dog wagon on the streets of St. Louis, says the Post Dispatch of that city. Not a vehicle from which "hot dogs," otherwise known as frankfurters, are sold, but a dark green Little Giant motor cart in which unlicensed animals are gathered up and carried to the pound.

The car was purchased from the Corby Supply Co., agents for the Little Giant truck in St. Louis.

The new motor car is doing the work which has been done by several teams and wagons. It covers a large part of the city each day.

The dogcatchers will be paid a salary of \$17 a week, instead of a bonus for each dog caught, as under the former system.

This is proving an economical method of ridding the city of unlicensed dogs, says Marshal Mohrstadt. The auto enables the dogcatchers to move so rapidly that the catchers reach a neighbor-

hood before residents have time to tie up their unlicensed pets.

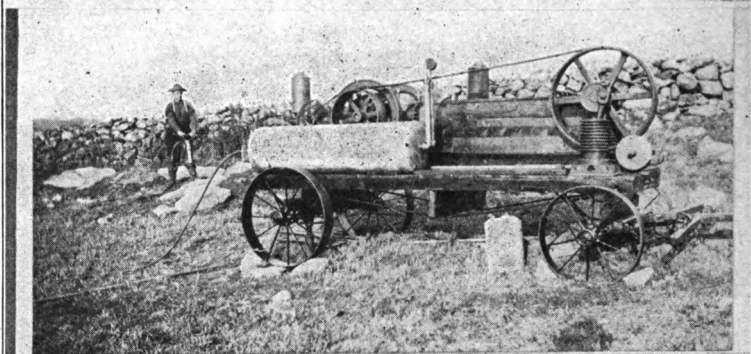
The wagon bed has doors on top through which the dogs are put inside, and steps on the rear are provided for the men with the wire nooses. It has a capacity of 60 dogs, all of which goes to show that there is a Little Giant for every business.

### Bad Walking.

An aged colored man, of the "Unc" Rasmus type, shambled into a shoe store in Thomasville, Ga., and asked for a pair of boots.

"What's the matter, uncle?" asked the clerk. "You never wore a pair of shoes in your life."

"No, sir," said the old darkey, scratching his woolly head; "dat Ah ain't. Ah ain't neber had no shoes on in mah life, but sense dis hear probishun done gone int' effect, de woods is so full ub bottles dat a well-meanin' niggah kain't keep from manglin' his feet."







Home of the Little Giant Truck, Chicago Heights, Ill. Photo was taken on the day of the local business men's picnic, when a number of Little Giants took part in the parade.

#### Farming With a Plug Drill.

In Connecticut and some other parts of New England where blasting is Nature's first law, it requires the alchemy of genius to transform a vista of boulders and quarry land into fertile farms. Frank R. Ayer of Norwich, Conn., typifies this spirit of alchemy. With the aid of a plug drill, a "rig (shown in middle view, opposite page) and a whole lot of pluck, patience and perseverance, he has been able to break up and remove a sea of boulders as shown at the top of the page, and leave it in clean, productive condition, as shown at the foot of the page.

The idea of using a rig of this description came to Mr. Ayer after having spent many years with his father drilling by hand to clear the land. The rig has proven profitable in other ways, as he has done work for the city of Nor-

wich in drilling for pipe lines for the water department.

The portable air compressing outfit he uses consists of a 10-horse power air cooled double cylinder engine and a Caldwell air cooled air compressor.

#### A Practical American.

She had returned from a tour through Italy with her father who informed a friend that he liked all the Italian cities, but most of all he loved Venice.

"Ah, Venice, to be sure!" said the friend. "I can readily understand that your father would like Venice, with its gondolas, and St. Mark's and Michel-angelos."

"Oh, no," the young lady interrupted, "it wasn't that. He liked it because he could sit in the hotel and fish from the window."



# IDEAL POWER

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## TERMS OF SUBSCRIPTION

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## ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our subscription list.

### Ideal Power Gets First Hand Information on Present Conditions in China.

Reading the daily newspaper accounts of the struggles between the rebels and the new republican government in China has benumbed our abilities to appreciate the real conditions there, particularly with respect to the merchant and trader.

The following letter, just received from a special representative in Canton, sets forth vividly what the manufacturer's representative in China is up against:

"The long drawn out fight that has stood in the way of the business interests of the province of Kwongtung has at last commenced to be looked upon as history, as during the month the 72 guilds of the city of Canton had petitioned the Tu Tuh that unless conditions were changed the shops of the merchants composing the different guilds would close their doors within the next five weeks and suspend all business. This, together with the strong pressure that was being brought upon the local officials, was too much for them to stand so in face of it all Tu Tuh Wu Han Man ran away and is now in hiding in the Portuguese port of Macao, which is supposed to be the hiding place also of the once famous Sun Yat Sen, and as it has been the party headed by these two gentlemen that has been standing in the way of all matters that threatened the government under President Yuan, merchants generally look upon the change with favor. But in cases of this kind in

China it generally takes weeks, months and sometimes years before a new set of officials can be installed and matters once more assume their normal relations, and it is this period that we are going through at this time, and while the Peking government has appointed two good men to take up the dual positions here, neither of them has as yet assumed his post. On the other hand they have put ultimatums and conditions before the Peking government setting forth the conditions upon which they will take up the posts, and as yet we cannot see any definite settlement of the existing state of affairs, and until this has been fixed up and once more protection established we cannot look for business to go ahead. To travel and go away into the interior at this time is a very dangerous undertaking. The pirates would soon make trouble for you, as they have their camps now within five miles of the city and the daily pirating of steamers and crafts not even excepting those that fly a foreign flag is of daily occurrence. To ship cargo into the interior is now an impossibility and only three weeks ago we were shipping a boat full of pumps to go up the West river for irrigation work and had it held up for several days for ransom, and any wealthy Chinese that are caught traveling are taken and held for ransom as well. So you will see that naturally the only thing that is being sold now is the foodstuffs, etc., coming into this port, and we cannot look for any new business until we can get away after it, and peace and protection once more be established."

### Bi-Plane Song.

A bi-plane falls near city walls,  
From snowy clouds. The same old story.

Another shakes across the lakes  
And drops its birdman, limp and gory.  
Go, bi-plane—go! Beat the world's record, flying!

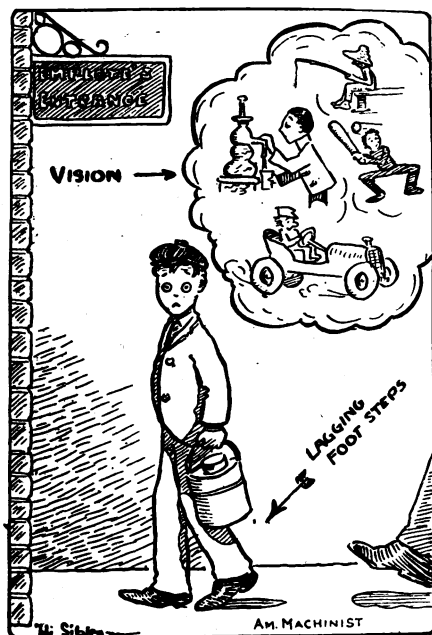
Go, bi-plane! Answer, birdmen! Try  
ing, trying, dying.

—Fanny Byrne.

## Apprenticeship.

By Hi Sibley.

When a young man is about two years old he hasn't yet begun to think of what trade he wants to follow when he gets older—his mind is on his meals, mostly—frequent and regular ones. At six, if he thinks of any trade at all, he aspires to be a scissors grinder or a cowboy or a pirate. Ten years later, when he



seriously looks about for a line of work to follow, he covets the position of that immaculate creature who dispenses chocolate sodas behind an ornate marble fountain, or perhaps he envies the nattily dressed young chap who sells neckties and shirts. And again, if he has plenty of red corpuscles in his blood, he wants to be a chauffeur. He doesn't stop to consider that after ten years of dispensing or selling or chauffeuring the glamor is quite all worn off and he is about where he started.

But few of the boys aspire to be machinists. There isn't anything about a machinist's job that appeals to them. The prospect of sitting all day before a noisy, greasy machine tapping nuts when they would much prefer—at that age—

to be out batting flies or catching suckers, is not at all alluring. The hours are long, and while the work is not hard, it is often monotonous. Being impatient, the average young man cannot see how he is learning much by doing the same thing over day after day for six months. He knows that if he had his own way about it, he would be a skilled mechanic inside of thirty days.

With mingled emotions I recall my own apprenticeship. It covered a period of three weeks. In that time I learned the trade from soup to nuts and back again. In fact, my training was so thorough that even now, years afterward, I can step into any machine shop and pick out an arbor press or a shaft hanger without the least hesitation. Of course, I will admit that everyone doesn't learn that fast, but you see I was pushed through more rapidly than most of them. My foreman was mighty strong on the push—he never let up until I reached the front door. Then he told me that I ought to go to some big plant and start in right at the top. He didn't have any position to offer a man of my caliber.

Still following the trade? Oh, mercy no! I write the "Household Hints" for a country newspaper. In my spare time I earn a little extra money selling hole-proof hose—for gardens and lawns, I mean. But to return to our subject. My first job, as I recall, was drilling oil holes in feed brackets. This work was done on a sensitive drill. It was the most sensitive drill I ever saw. If it was not humored and petted it would hump up its back and pout and refuse to do any work at all. Moreover, the holes had to be drilled in at an angle and the point of the drill had a tendency to slide all over the place before it took "a-holt," and then before it was half way through the metal, it would cramp and break. I explained to the foreman that I could turn out lots more work and do a better job by drilling at right angles in a different spot, and he complimented my intelligence and remarked that to be a success an oil hole must lead to the department of the interior, whereas in my plan the hole would only penetrate some

of the superficial tissue and not lead anywhere in particular.

In due time I got so I could shoot the holes through where they belonged, but the belt kept slipping on the machine every now and then; so I devised an ingenious belt shifter that would throw on when the feed lever was pulled down, and shift back when the lever was raised. When the foreman came around and took one look at the shifter, he mumbled something about my being "too darn bright for this place," and set me to work trucking castings. A few days of this gave me a chance to reflect on the futility of trying to learn how to be a machinist, and I was just about to leave and try to get a job in the bluing works, when I was shifted to a miller. Then I took more interest in my chosen trade. That miller was a lot of fun. My first job did not require such an awful lot of skill, because the foreman set up the work—brass bars to be slotted—showed me how to start and stop the machine, and that is all there was to it. But it got tiresome after a while, so I put in a few extra slots in some bars one day to improve their appearance, but I guess it was not just the right thing to do. The foreman was displeased. More than that, he was very angry. In no uncertain terms he told me to go to the office and get my \$3 and never show up again. He was a husky foreman, so I took his advice. Well, that put an end to my mechanical career, but when I look around and see the boys who started out with me, and who stuck to it and in consequence are drawing \$3 and \$4 a day, it furnishes a lot of food for thought.—*American Machinist.*

### The Smiths Have Nothing on These.

At a regular mass meeting of the Scandinavians in South Minneapolis a few nights since, the pastor, having heard that one John Johnson wanted to join the church, said, "Will John Johnson, if present, please stand up?" Nearly all the men present stood up. The bewildered preacher looked around awhile, and then said: "You may sit down, Mr. Johnson. I will call a meeting of you some time next week."

### What is Efficiency?

Harrington Emerson, the efficiency expert, was in Detroit recently and gave an address before a large company of business men.

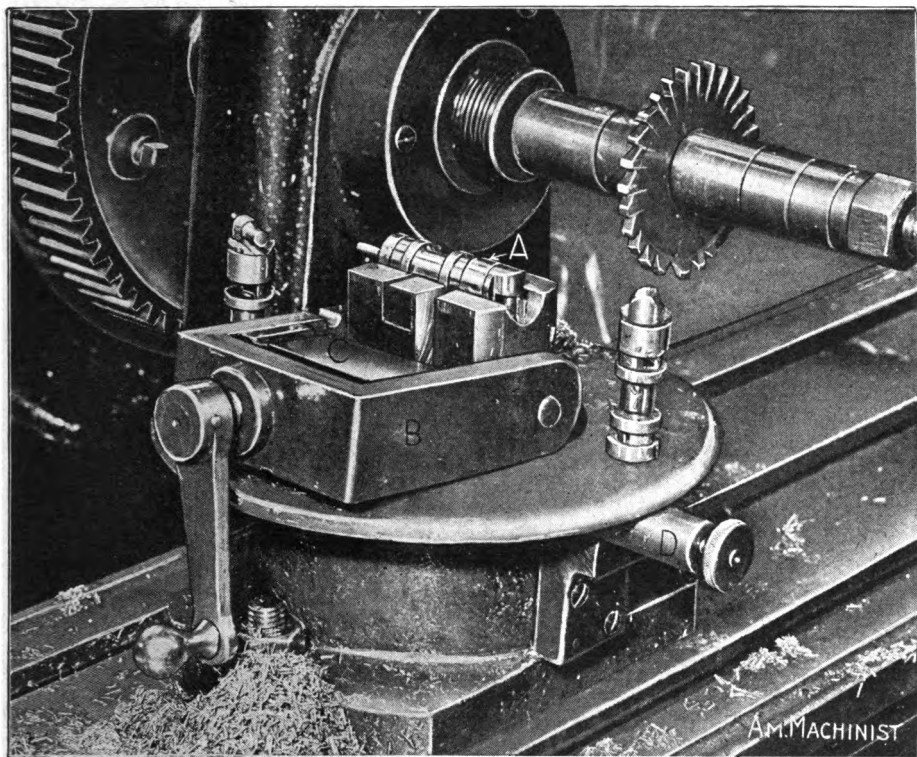
In describing the movement for greater efficiency in daily operations, he said that efficiency is confounded by many with strenuousness, which is not efficiency, for strenuousness is the accomplishment of a slightly greater result by a very much greater effort, while efficiency is the accomplishment of a very much greater result by very much less effort.

Neither should efficiency, he said, be confounded with system, which not only is not efficiency, but often is an obstacle to efficiency, nor can efficiency presume to rest upon the intensified use of such crude instruments as land, labor and capital. The point to be remembered, said Mr. Emerson, is that efficiency rests upon ideas and the use of imagination, and therefore is imaginative, not mere strenuousness and not mere system, but rather the gift which enables us, by intensified thinking, to accomplish a maximum with the least effort.

He said efficiency requires ideals, common sense, competent counsel, discipline, a square deal, reliability, planning, scheduling of operations, standardized conditions, standardized operation, and system of awards in order to reach its highest point.

As illustrative of the fact that system is not efficiency, he told of a young doctor who during the Spanish-American war was sent to Cuba, where he found in the hospital men dying of wounds, of typhoid and of yellow fever. There was no quinine or other medicines and no dressings, and in a frenzy of anxiety he hurried a demand to Washington.

He waited with impatience for the return of the vessel with the supplies which he had ordered to save the lives of the dying soldiers. When the vessel came he found this letter: "What you ordered requires 'Form 23' and you have written the requisition on 'Form 25.' Please make order out again on the correct form and send it to us, so we can fill order."



#### How the Ports Are Milled in Piston Valves of Little Giant Drills.

The milling fixture shown above is for holding the small piston valve shown, while the ports are being milled on opposite sides, so as to connect with the main central port which runs part way through the valve. With the piece in position as at A, the swinging clamp B is moved into a vertical position and the piece tightened by means of the small clamp C.

The table is then fed against the cutter and the opening milled on the other end of the valve, a slot which cannot be seen being provided to allow the cutter to feed into the proper depth. The central portion of the fixture is then swung half way round, or through an arc of 180 deg., under control of the index pin D. This brings the slot opposite a milling cutter and the work is again fed in, so that the other port can be milled as shown.

#### School Friends.

The conductor of a western freight train saw a tramp stealing a ride on one of the forward cars. He told a brakeman in the caboose to go up and put the man off at the first stop. When the brakeman approached the tramp the latter waved a big revolver and told him to get away.

"Did you get rid of him?" the conductor asked when the train was under motion again.

"I hadn't the heart," was the reply. "He turned out to be an old school friend of mine."

"I'll take care of him," said the conductor, as he started over the tops of the cars.

When the train had again started the brakeman came and said:

"Well, is he off?"

"No, he turned out to be an old school friend of mine, too," replied the conductor.

**He Never Spoke Again.**

The following story is told of a ventriloquist, now famous; but at the time of this incident he was so poor that he used to walk between the places where he was to appear. On one of these tours he picked up a miserable little dog because it looked so much like he felt. The story will explain what became of the dog.

The first house he came to was an inn, and, of course, he wanted a drink. He had no money, but went in anyhow, to see what he could do.

The proprietor said: "Well, what will you take?" He said: "I'll take a little whiskey." And then, turning to the dog, he asked: "What will you have?" The answer came very promptly, "I'll take a ham sandwich." The publican was so surprised he almost fainted. He looked at the dog a moment, and then asked: "What did you say?" The dog replied: "I said I'd take a ham sandwich." Mine host thought it wonderful that a dog should be able to talk, and asked who had trained him, how long it had taken, and wound up with: "How much will you take for him?" "Oh," replied Mr. Ventriloquist, "I wouldn't sell him at any price, but I am a little hard up and if you will lend me ten dollars I will leave him with you until I bring back the money." "All right," was the reply. "I just want him for a little while, so I can show him to some people I know around here." So everything was settled, the money paid, the dog left with the proprietor, and as the ventriloquist went out he turned and waved his hand to the dog and said: "Well, good-bye, Jack, I'll come back soon." The dog looked at him, and said: "You mean, despicable man, to sell me for ten dollars, after all I've done for you! So help me, Moses, I'll never speak another word as long as I live." And he didn't.

**In Kentucky.**

"How about the pockets?" asked the tailor.

"Quart size, please," directed the man.  
—Louisville Courier-Journal.

**Bertha.**

By C. I. H.

'Twould give my heart a merry time  
If I could but unearth—a  
A word that with my love would rhyme;  
You see her name is Bertha.

Should I succeed my chest would swell  
With pride to prodigious girth—a,  
But who has written or heard tell  
Of a word that rhymes with Bertha.

That she's unique I will confess,  
For language has a dearth—a  
Of words or phrases that express  
The loveliness of Bertha.

In vain I've offered piles of gold  
For the word that tells her worth—a;  
Why don't the dictionaries hold  
The word that rhymes with Bertha.

My vision will be sad and blurred,  
There'll be no joy or mirth—a  
Until I find the magic word  
That rhymes and chimes with Bertha.

For it I'll seek from Cobble's Creek  
To the shores of the Frith of Firth—a—  
What none hath deigned or dared to  
speak,  
The word that rhymes with Bertha.

**An Affair of States.**

A charming Miss. garbed Ala. mode  
Approached a bosky Del.  
A Mass. of brush beside the road  
Ore.-turned her, and she fell.

"Ah, what a fix I Minn.," she cries  
(The Ariz. filled with shrieks).  
"Ind. deed I'm hurt, I Kan. not rise,  
"Now I'll be Ill. for weeks!"

Tenn. paces from the wailing maid  
There walked a young Md.  
"Stay where you R. I'll give you aid,"  
He called, "Just count on Me."

"O, send for Pa.," she moaned; but he  
Picked up the fainting Miss.  
She played her Conn. game skilfully,  
They're married now, I Wis.

—Life.



It's a short lane that isn't tainted with gasoline.

"Dead Game Sport" is a most expensive title.

It is natural for some women to act unnatural.

The course of true love often leads to matrimony.

You can generally get around people you can see through.

It's easy to induce luck to come our way—if it is hard luck.

The supply of after dinner speakers always exceeds the demand.

Complicating the situation, the kicker is nearly always headstrong.

A woman isn't always true to her color, even when she applies it herself.

Every time a woman takes the conceit out of a man she adds to her own.

You seldom see a successful business man who boasts of being a thoroughbred.

Once in a while a man doesn't forget his old friends after acquiring wealth and fame.

It takes a wife with true faith to brag about her husband's ability, even when she doesn't believe in it herself.

Love based on pity is apt to come out in the laundry.

Getting a husband is an art; keeping him is a domestic problem.

A warm friend is one who is willing to divide his cold cash with us.

A kiss in the dark may be a divine spark, or it may be a mistake.

Give the old fashioned woman the lye and she will make a batch of soap.

Orchestras in some hotel dining rooms are useful when the guests eat soup.

If a man has no brains there's nothing in his head to cause him to know it.

There are times when a man feels that he either has no friends or too many.

Even if a man does have fairly good sense, he can easily write a few love letters.

The average young woman is willing to marry a brainy man if she can't do any better.

The woman who goes around lecturing about the way to make home happy doesn't fool anybody.

We admire a woman who prides herself on her ability to understand things without giving them a thought.

# BULLETIN DIRECTORY

Requests for these bulletins should be directed to our Chicago or New York offices or to our nearest branch as shown on inside front cover.

## PNEUMATIC TOOLS

- 121... Pneumatic Rammers and Foundry Appliances.
- 124... Pneumatic Riveting, Chipping, Calking and Stone Hammers.
- 125... Pneumatic Yoke, Jam and Shell Riveters, Holders-on, Drift Bolt Drivers, Rivet Busters.
- 126... Compression Riveters.
- 127... Pneumatic Drills, Reamers, Wood Borers, Flue Rolling and Tapping Machinery and Grinders.
- 128... Miscellaneous equipment for Pneumatic Drills, viz: Chucks, Twist Drills, Reamers, Augers, Flue Cutters, Flue Expanders, Angle Gears.
- 129... Hose, Hose Couplings and Hose Clamp Tools.
- 130... Lubrication of Pneumatic Tools.
- 131... Miscellaneous Tools, viz: Pipe Benders, Air Forge, Bolt Nipper, Drilling Stands, Blow-off Cocks, Bell Ringers, Drill Repair Vises, Painting Machines.
- 132... Pneumatic Motors and Pneumatic Geared Hoists.
- 133... Cylinder Air Hoists and Jacks.

## ELECTRIC TOOLS

- E-22... Heavy Duty Electric Drills, Alternating Current.
- E-23... Air Cooled Direct Current Drills.
- E-25... Electric Hoists.
- E-26... Universal Electric Drills.
- E-27... Heavy Duty Electric Drills, Direct Current.
- E-28... Duntley Track Drills.
- E-29... Duntley Electric Grinders.

## AIR COMPRESSORS

- 34-A... Class "G" "Chicago Pneumatic" Compressors.
- 34-B... "Chicago Pneumatic" Power Driven Compressors.
- 34-C... "Chicago Pneumatic" Gasoline Driven Compressors.
- 34-F... Design and Construction Class "G" "Chicago Pneumatic" Compressors.

- 34-G... Air Receivers, Aftercoolers, Reheaters, etc.
- 34-H... General Instructions for Installing and Operating "Chicago Pneumatic" Compressors.
- 34-L... General Pneumatic Engineering Information.
- 34-O... Instructions for the Installation and Care of "Chicago Pneumatic" Gasoline Driven Air Compressors.
- 34-P... Class M-CB and M-CE New Enclosed Type Self-Oiling "Chicago Pneumatic" Power Driven Compressors.
- 34-R... Class L-SS and L-SB New Enclosed Type Self-Oiling "Chicago Pneumatic" Compressors.
- 34-T... Class "M" Corliss Enclosed Type Self-Oiling Four Valve "Chicago Pneumatic" Steam Driven Compressors.

## ROCK DRILLS AND PLUG DRILLS

- 118... Chicago Giant, Auxiliary Valve Rock Drill.
- 137... Chicago Giant Rock Drill, Tappet Type.
- 138... Chicago Giant Rock Drill Mountings.
- 139... Chicago Giant Rock Drill Appurtenances.
- 148... Chicago Plug Drills.

## LITTLE GIANT TRUCK

- 96... Heart of the Little Giant Truck.
- 114... Little Giant Chauffeur.
- 115... Anatomy of the Little Giant.
- 134... Comparison Horse and Wagon with Little Giant Delivery.
- 136B... Testimony in the Case of the Little Giant vs. Other Trucks.

## ROCKFORD and MISCELLANEOUS

- 37... Stone Carving Tools and Stone Dressers.
- 42... Boyer Speed Recorder.
- 43... Rockford Railway Motor Car.
- 117... Lubrication of Rockford Cars.
- 119... Operation of Rockford Cars.

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# IDEAL POWER

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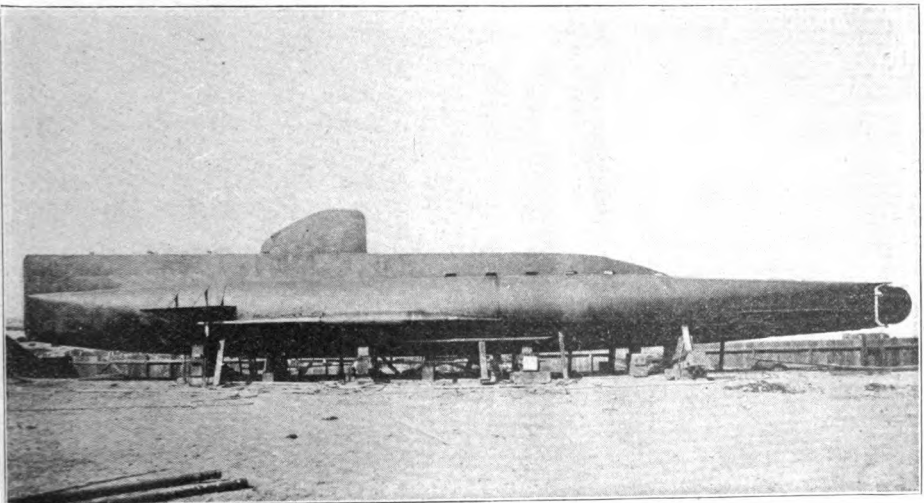
## Thirty-Six Hours Under Water—A Novel Type of Submarine Built with Pneumatic Tools

One of the conundrums that was put to every schoolboy twenty years ago was this: Which would you rather, suffer death in a railroad accident or go down with a ship at sea? This was the proper answer to the cheerful question: Railroad accident; because if you get killed in a railroad accident, there you

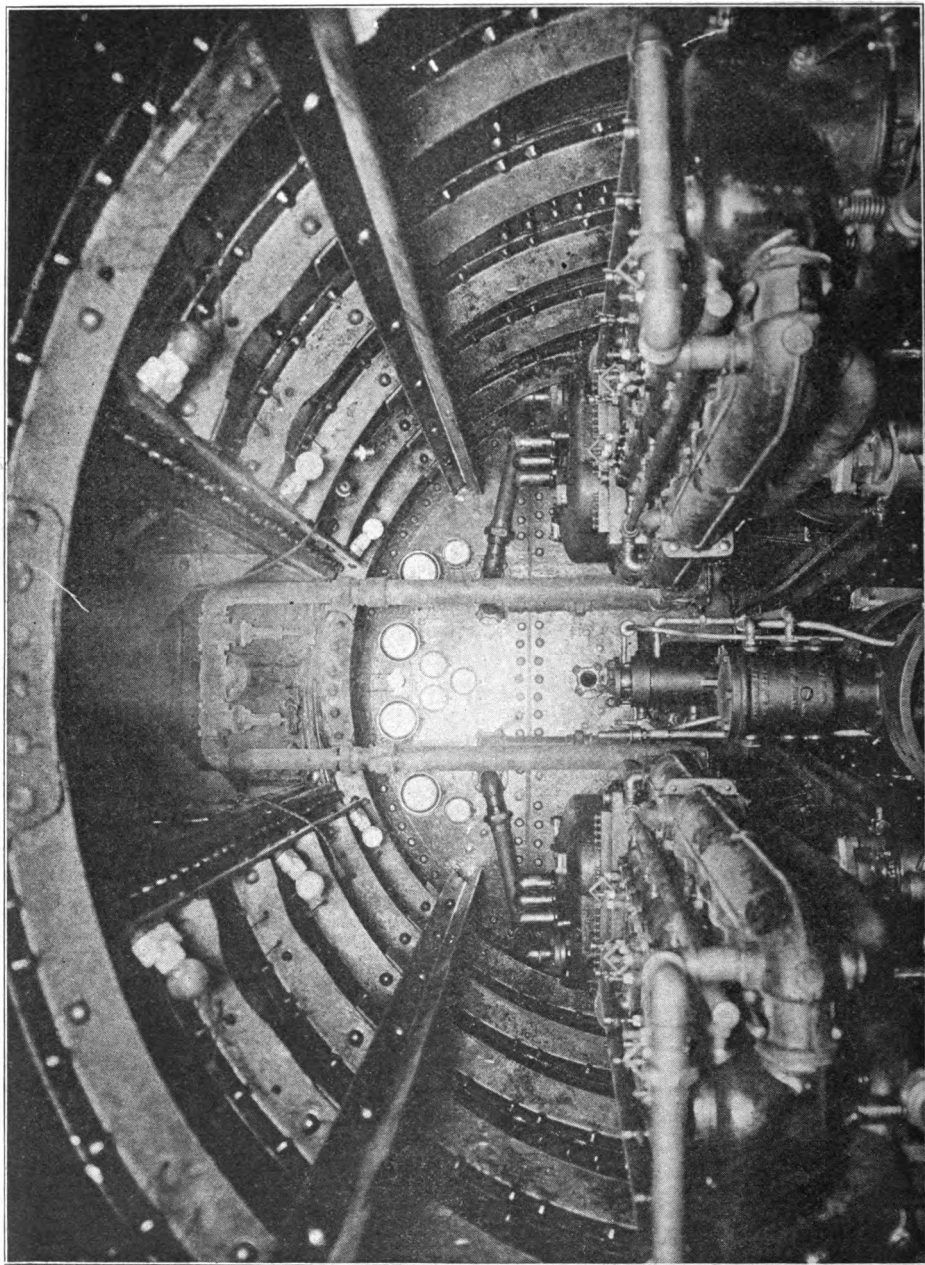
are, but if you down with a ship where are you?

Since those days airships and aeroplanes and submarine boats have been added to the practical means of transportation, and the conundrum has not kept up with the times.

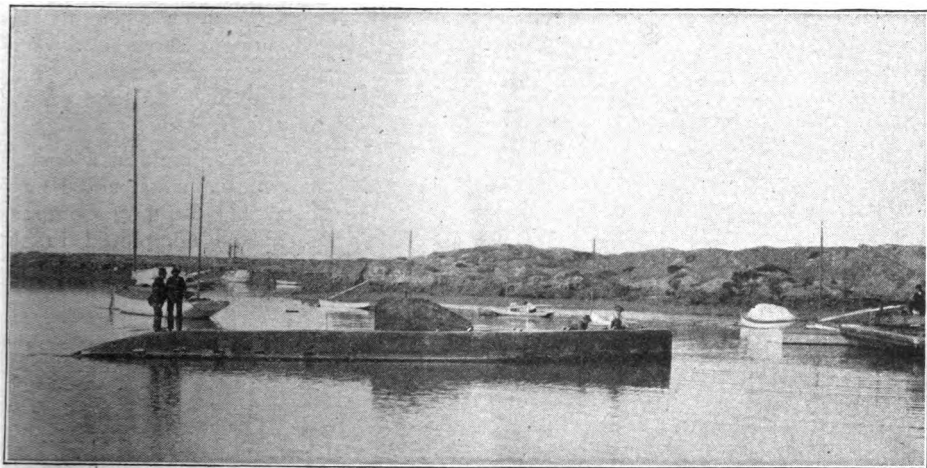
A few weeks ago the newspapers contained telegraphic dispatches sent



The Completed Craft, Showing Forward Propellers.



Engine Room, Showing the Two 110-Horse Power Gasoline Engines. All the Rivets Shown Were Driven with Boyer Hammers.



directly from a craft at the bottom of Long Beach Harbor, California. The Scientific American describes the boat as follows: The vessel was a submarine that was endeavoring to establish a world's record for submergence by staying down thirty-six hours as against the record then held by the "Octopus," which in 1907 remained under water twenty-four hours. The new sub-marine sank at 11 a. m. on Monday and promptly at 5 p. m. Tuesday rose to the surface with a new endurance record. It contained a crew of six men who were not in the least affected by their long imprisonment. Throughout the test they were able to communicate with the outside world by means of a cable.

The sub-marine is a seventy-five foot craft with 7.5-foot beam, with a depth of  $9\frac{1}{2}$  feet from the bottom of the keel to the top of its superstructure. The propelling machinery consists of two 110-horsepower Buffalo gasoline (petrol) engines, turning 900 revolutions per minute at full speed. The boat is also equipped with an air compressor, and flasks for storing up 36,000 cubic feet of air at a pressure of 3,000 pounds. It weighs forty-three tons.

It differs materially from the more familiar types, the most striking innovation being the position of the propellers near the bow. It is claimed that by thus pulling instead of pushing the

vessel through the water the tendency to dive too abruptly is eliminated.

The inventor is John M. Cage, who has been studying the building of submarines for many years and believes that his model will prove superior in many respects to those now in use. He claims a speed of from seventeen to eighteen knots for his vessel, running submerged, with a maximum speed on the surface of about sixteen knots. There are various automatic controls for ventilating, regulating the depth, maintaining stability and steering, but the details of these devices are withheld pending the issue of patents. The nature of some of them may be observed in the photographs, as for instance, the rudder, which resembles that of an aeroplane, the projection along the top of the craft resembling the dorsal fin of a fish, etc.

A very important feature is the elimination of storage batteries, as the vessel is operated by gas engines, used during submergence as well as while on the surface. Two gasoline engines are used, each developing 110 horsepower. By a device of unique construction, the exhaust from the engines is expelled from the sub-marine, while running under water, and an advantage of this system is that greater speed is obtainable while submerged than when running on the surface. Of course the use of gas engines under water necessi-

tates the operation of a device to discharge the exhaust so completely that the air will not be vitiated, and the inventor's tests seem to indicate that he has solved that problem.

On March 26 a test run was made at Long Beach with the following result: The boat was submerged to a depth of eighteen feet in a thirty-foot depth of water and was found to respond perfectly to her horizontal and vertical rudders, sinking bow first or stern first at will of the inventor, or rising and sinking on even keel. Three men made the initial trip, Mr. Cage, Chief Engineer Allen Hoar and Assistant Engineer Clifford Hauenstein. Later in the day some newspaper men were taken on a trial trip, and they also reported the success of the engine operations and the purity of the air while they were submerged and the absence of gasoline fumes. Of course no tests for speed were made while in the harbor, but it is believed that records in that line will be made owing to the novel features in the general outline, position of the propellers and devices for securing maximum power from the engines.

Regarding the feature of elimination of gas fumes, Mr. Cage says: "By our mechanical means we have run the engines, exhausting overboard against a back pressure of  $12\frac{1}{2}$  pounds, all the while maintaining a vacuum on the engine exhaust of  $23\frac{1}{2}$  inches. We have also run the engines under water with the valve on the outboard exhaust closed down until the gage showed a back pressure of 150 pounds, corresponding to a depth of water of over 300 feet, and

at that pressure run the engine for thirty minutes, always showing a vacuum of six inches on the engines. This test showed no appreciable load on the engines."

The novel craft was built at a cost of about \$70,000, and was constructed partly by the Craig Ship Building Company at Long Beach and completed in the yard of the Los Angeles Sub-marine Boat Company.

In addition to its value as a war craft Mr. Cage and his associates believe that there are great commercial possibilities in a vessel designed for the recovery of sunken treasure, and of course records are extant of countless millions of dollars in gold that have been lost in wrecked ships, and in many cases the position of the wrecks is known with sufficient accuracy for a submarine to locate them. Regarding this, the inventor says: "We propose to build a boat capable of being submerged to a depth of 1,000 feet with perfect safety, and with a lifting capacity of seventy-five tons. With grappling hooks, or clam-shell dredger, and with large and powerful arc lights installed in the bottom of the boat, it would be a feasible undertaking for men within the submarine to work effectively in recovering sunken treasure."

In the construction of this wonderful boat all of the chipping, calking and riveting was done with Boyer Pneumatic Hammers. Mr. Cage also tells us that the Boyer Holder On plays an important part in the automatic control of the boat.

## Contractors Need Hand Drills and Portable Gasoline Driven Air Compressors

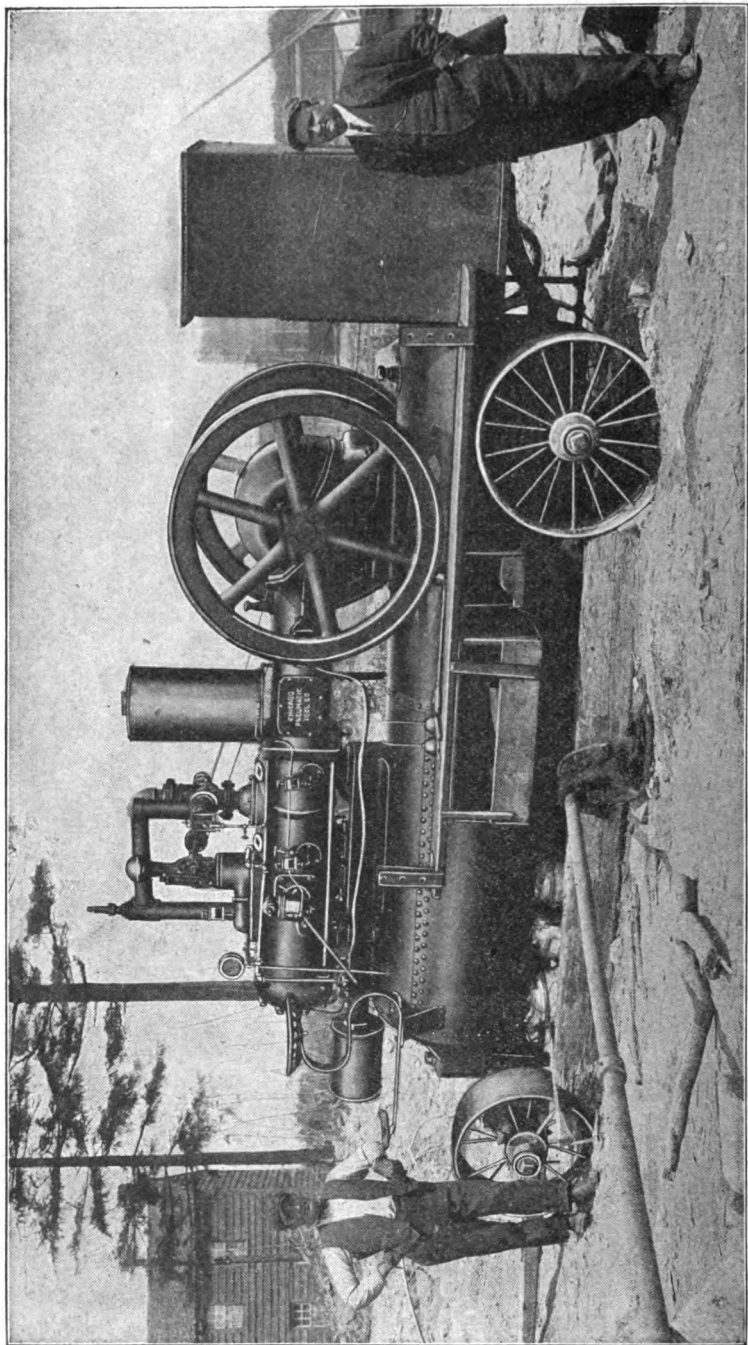
The Chicago Pneumatic Tool Company has just issued a Bulletin, No. 148, on Valveless Hand Drills and Portable Gasoline Compressors, from which the following extracts indicating its pur-

pose and scope have been taken:

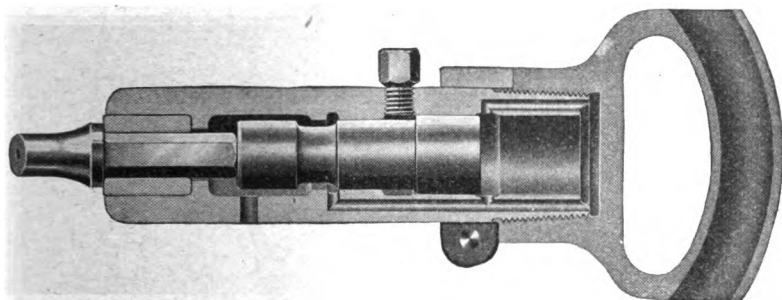
"The Chicago Valveless Hand Drill" was first placed on the market some six years ago and since then we have put thousands of them in successful opera-



Chicago Hand Drills Drilling Rock in the Sinking of Trenches for Sewers, Gas Mains, Etc., on Site of Old Morris Race Track, New York City, Which Is Now Being Laid Out Into Building Lots and Streets.



"Chicago Pneumatic" Gasoline Engine Driven Compressor, Used for Operating Hand Drills on Old Boston Road.  
J. B. Maletesta, New York City, Contractor.



tion. It is a sturdy little "All Steel" machine, made for hard service. In actual service it has proven itself a superior machine because it does so much work and costs so little to operate and maintain.

The advantages of the "Valveless" construction are so well known and are so generally recognized that it is unnecessary to repeat them here at length, other than to say that by having the piston act as its own valve the Chicago Valveless Hand Drill not only saves in air, but strikes a very hard and a very fast blow on the steel, all of which makes for fast drilling.

As will be seen in the sectional illustration the Chicago Valveless Hand Drill consists of only three pieces; the cylinder, the piston and the handle, plus a bushing for holding the drill steel, a collar to lock the handle and a nipple for the air hose. Nothing could be simpler; nothing more effective.

The piston, which is a solid piece of steel, hardened and ground all over, weighs three pounds and strikes 2,000 blows a minute on the head of the drill steel. It also takes the place of a valve, the elimination of which is commendable because of the cost as well as because of the trouble most valves cause.

The heavy piston and great speed at which each blow is delivered accounts for the fast drilling records made everywhere by the Chicago Valveless Hand Drill, and it is nothing unusual for it to drill 5 to 6 inches per minute. We have even known it to drill holes 10 to 12 feet in depth, although 6 foot holes are considered the economical limit.

Hollow drill steels are used and the

rock cuttings are removed from the bottom of the hole by a portion of the exhaust air passing down through the hole in the steel and escaping at the bit end of it. In that way the bottom of the hole being drilled is always kept clear of rock cuttings and there is no necessity for stopping the drilling to clean the hole.

When desired the extension handle shown in the illustration on front cover may be removed from the drill and the machine rotated by the "D" Spade Handle, which permits operating close to the wall or in corners.

The Chicago Valveless Hand Drill is intended to be operated with compressed air, the higher the pressure, of course, the better being the results. It will also operate with steam, but because of the discomfort to the operator, due to the heat of the steam and the inability to keep the exhaust away from the man, we do not recommend its use.

With reference to the compressor, they have this to say:

Pneumatic tools have revolutionized shop methods by making it possible to convey the machine to the work instead of bringing the work to the machine.

The automobile made the gas engine practicable in the hands of inexperienced persons remote from the base of supplies. In the "Chicago Pneumatic" Gasoline Driven Compressor the gasoline engine with all of its advantages is presented in its highest efficiency. The combination consists of the engine direct connected to an air compressor securely placed upon a truck mounted air receiver. The outfit represents the





A Hallowe'en Suggestion.—How a Little Giant Took Part in a Hallowe'en Celebration.

last word in compressor portability providing compressed air when you want it, where you want it, and and as you want it.

It is a simple compressor outfit, automatically regulated and needs no expert attendance. It is moderate in first cost and economical in gasoline consumption. Cartage of wood, coal or ashes is eliminated. No electricity or other source of power supply is required.

#### Riveting Pressures.

The Engineering Record recently published an article on riveting pressures and temperatures which, while somewhat technical, presents the results of some interesting tests. The experiments were made with compression riveters on button head rivets. Messrs. E. D. Hayes and W. L. Edwards of the Rose Polytechnic School conducted the test.

The pressure exerted by the dies on the rivet heads were computed from the observed deflections in the jaws of the riveting machine and were magnified eight times by a pantograph with a pen-

cil recording on a steam-engine indicator drum.

The pantograph was calibrated to determine the tensile displacement corresponding to a given force in the dies and the result was plotted on cross-section paper, with the actual pressures as abscissæ and the tensile displacement as ordinates, the result being a line with a very slight upward curve.

A 26-in. portable bridge-riveting machine with toggle-driven dies was suspended with the axis of the dies vertical and in such a position that the heads of the Rhiel testing machine were between the die holders and transmitted their stress to them through conical bearings calculated to insure alignment.

After calibration the riveting machine was removed from the testing machine and suspended in a similar position during the remainder of the experiment. Another series of tests was made to determine the difference between the actual and theoretical pressures at different points of the stroke, corresponding curves were plotted from the results and an efficiency curve was laid out showing that the efficiency increased



Mr. Earl S. Ford, agent for the Little Giant, Grafton, W. Va., sends in this photograph. The two Little Giant loads of church picnickers were hauled three miles out to Mr. Morgan's farm in the morning, and after doing a full day's work, went after their loads in the evening.

throughout the plunger stroke until the last, when the theoretical pressure becomes infinite and the efficiency becomes zero. The maximum efficiency obtained was 62 per cent, which it was thought may have been partly due to the newness of the machine.

The rivets were driven through several thicknesses of steel plates clamped together and drilled 1/16. in. larger than the diameter of the cold rivet. They were heated in a portable forge with a hand blower to temperatures varying from 1,100 to 2,700 deg. Fahr., as determined by a pyrometer embedded in the fire close to the rivet, the latter being kept there long enough to acquire the temperature of the fire. It was believed that the drop in temperature between the forge and the riveting machine did not exceed 200 deg.

All of the rivets were of standard lengths and had enough material to furnish a little excess steel in the head. The grips of the rivets varied from 5/8 to 1 7/8 in. The shortest ones filled the holes completely, which was not the case with some of the longest ones. No loose rivets were found, and when

some of the rivets were sawed through it was noticed that the very hot rivets had not filled the holes any better than some of the coldest ones. It was noted that the pressure did not increase in any large ratio as the plate thickness increased.

The lowest pressures, which caused many to completely fill the holes where the rivets gripped two plates whose combined thickness was about equal to the diameter of the rivets, were about as follows: For 1-in. rivets, 82,000 lb.; 7/8-in. rivets, 70,000 lb.; 3/4-in. rivets, 60,000 lb.; 5/8-in. rivets, 35,000 lb.

Of the 53 rivets driven, fourteen 5/8-in. rivets were driven at an average temperature of 1,914 deg. and an average pressure of 65,357 lb. and in an average time of 11 seconds each. Seventeen 3/4-in. rivets were driven at an average temperature of 1,935 deg., 58,823 lb. pressure and 8 seconds time; fifteen 7/8-in. rivets at 2,120 deg. temperature, 74,600 lb. pressure, and 11.7 seconds time; three 1-in. rivets, 2,400 deg. temperature, 53,000 lb. pressure and 20 seconds time; four 5/8-in. rivets at an average pressure of 53,500 lb.

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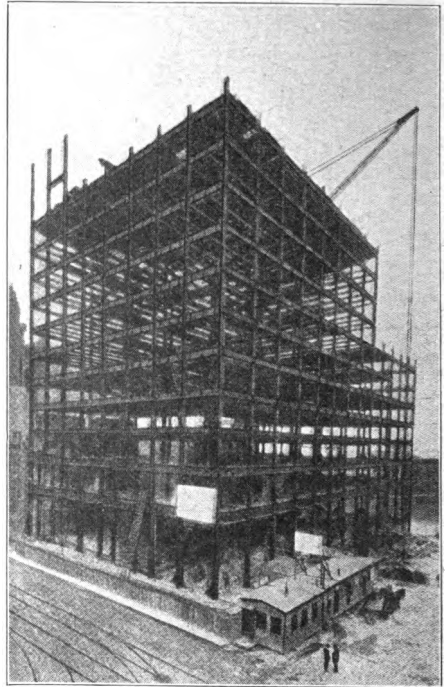
### Auto Trucks Should Be Rewarded, Not Taxed—Another View of the Truck Problem.

Every motor truck that comes into use means the banishment from the city of at least two horses, and oftener of four or six. That, in turn, means reducing to that extent the difficulty and expense of keeping the streets of the city clean and protecting its inhabitants from filth-fostered diseases, which are many.

There is no need to deny that the horse is a noble animal and faithful servant. As a matter of fact, of course, he isn't particularly noble, and his alleged fidelity is only a product of anthropomorphizing imaginations — of what used to be called "nature-faking." There is no profit, however, in dwelling on these unpopular truths. Better to admit, frankly, that the services of horses to humanity have been enormous, to pass lightly over the demoralizing effect which men have always suffered from close association with them, and to put a note of sorrow as sincere as may be in saying that as fellow-residents of a city they are numbered among undesirable and tolerable only from necessity.

The automobile began and carried far the banishment of horses from cities, and the motor truck is continuing the good work and promises to complete it in time. The time would be the shorter if the process of substitution were encouraged by rewards instead of dis-

couraged by taxes. When the horses are all gone, street cleaning will be a cheap and easy task, compared with what it is now, and as soon as we stop making pavements adjusted to equine convenience, and show judicious regard for the peculiarities of modern traffic, there will be practically no street cleaning, properly so called, to do—will not, that is, if we can train ourselves to better manners and higher aesthetic standards. And that is probably possible.



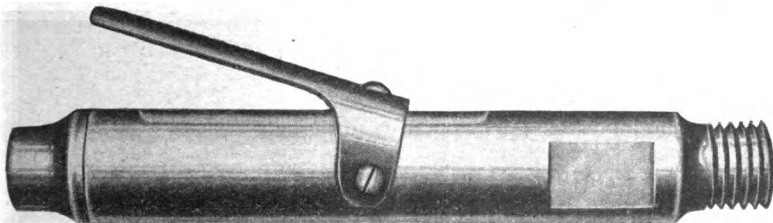
**New First National Bank Building,  
Milwaukee, Wis.**

The International Steel Erection Co. has completed its work on the new First National Bank Building, Milwaukee, Wis. Mr. J. P. Seymour, superintendent, says that Chicago Pneumatic tools were used exclusively. A "Chicago Pneumatic" 7x10 Gasoline Driven Compressor, with the help of a small electric compressor, furnished the air for nine No. 80 Boyer Hammers and one Little Giant Drill. The view above given shows the structure as it appeared on June 5.



This Little Giant truck is owned by J. W. Emrick of Visalia, Calif. It is shown loaded with 1985 pounds of gas meters,—250 meters in all—which he hauled from Visalia to Tulare, a distance of 12 miles, in one hour and fifteen minutes. He could have made better time, but on account of the load being top heavy, he had to operate the car slowly and carefully.

I would like to live in a great city all my vigorous life. But I would like to grow old and die in the little country town, where the neighbors would come in and ask after me in the last days, follow me kindly to the churchyard, when I was gone, and come back for a little tender touch of comfort to those who were left behind.—John Temple Graves.



New "Safety" Throttle for Little Giant Drills. .

In order to meet the demands of the "Safety First" movement, the Chicago Pneumatic Tool Company has brought out a safety throttle which may be applied to their Little Giant Drills of these

sizes: "C," "D," "E" and Nos. 1 and 2. Improved Ball Bearing Drills. This valve is operated by a spring lever and is held open by the hand that grips the throttle, automatically and instantly closing when the hand is removed.

**On the Occasion of an American Girl  
Presenting a Bunch of Shamrocks  
to a Milesian.**

Japers, 'tis proud as a prince I am  
wearin'

Erin's own native emblem of emerald  
green,

And what makes the dear sprig to me  
doubly endearin',

Na back lish, 'tis the gift of an Amer-  
ican queen.

Not a Saint would our Patrick be, had  
he but met her.

Enthroned in her beauty 'mong Erin's  
green hills,

The heart would cease throbbing ere he  
could forget her,

The sunbeams cease kissing earth's  
fountains and rills,

Even Erin's sweet music lose the sad  
note that thrills.

Many forms and faces since the close  
of life's childhood

Caused my heart to beat fast by the  
Jumna and Bann,

Grace and beauty enthralled both in  
bower and wildwood

On Afric's rolling veldts and mystic  
Hindustan,

Remembrance of flames at Poona and  
Jahalabad,

Reigning belles at Colerain, Kanda-  
har and Tralee,

Every flower and fair bud from Millroy  
to Allahabad

Yields the palm to this colleen, fair  
Cushla-ma-chree.

(Second contribution from the Pacific  
Coast.)

**Try It, But Quickly.**

Betty Botter bought some butter.

"But," she said, "this butter's bitter;

If I put it in my batter,

It will make my batter bitter.

But a bit of better butter

Will but make my batter better."

So she bought a bit o' butter

Better than the bitter butter,

And made her bitter batter better.

So 'twas better Betty Botter

Bought a bit of better butter.

**Where the West Begins.**

Out where the handclasp's a little  
stronger,

Out where a smile dwells a little longer,  
That's where the West begins,

Out where the sun is a little brighter,  
Where the snows that fall are a trifle  
whiter,

Where the bonds of home are a wee bit  
tighter,

That's where the West begins.

Out where the skies are a trifle bluer,

Out where friendship's a little truer,

That's where the West begins.

Out where a fresher breeze is blowing.

Where there's laughter in every stream-  
let flowing,

Where there's more of reaping and less  
of sowing,

That's where the West begins,

Out where the world is in the making,

Where fewer hearts with despair are  
aching—

That's where the West begins.

Where there is more of singing and less  
sighing,

Where there's more of giving and less  
of buying,

And where a man makes friends without  
half trying—

That's where the West begins.

Anon.

Little Willie's father found his youth-  
ful son holding up one of his rabbits by  
the ears, and saying to him: "How much  
is seven and seven, now?"

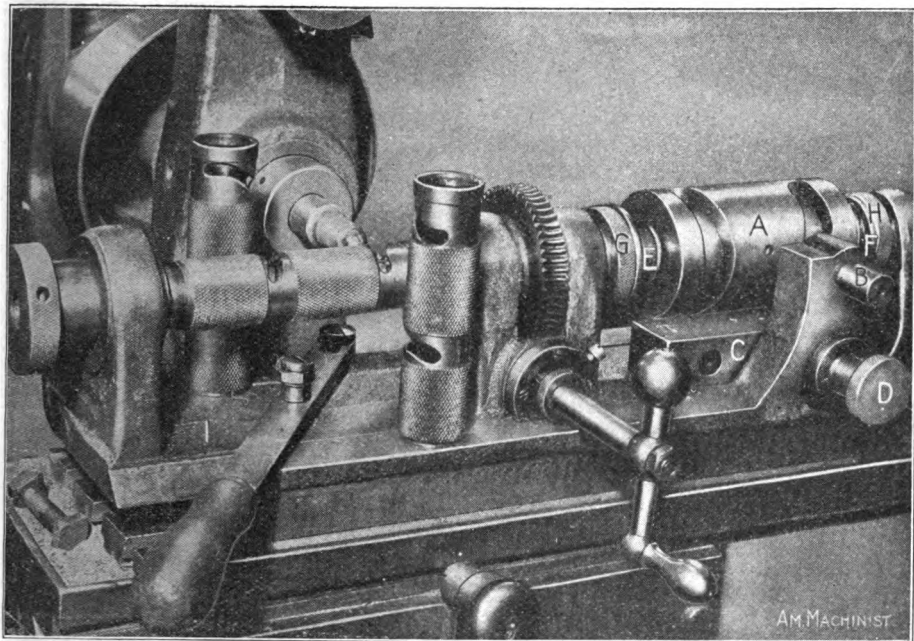
"Bah!" the father heard the boy say,  
"I knew you couldn't. Here's another  
one: Six and six is how much?"

"Why, Willie, what in the world are  
you doing with your rabbit?" asked the  
father.

"Willie threw the rabbit down with  
disgust. "I knew our teacher was lying  
to us," was all he said.

"Why, how?" asked the father.

"Why, she told us this morning that  
rabbits were the greatest multipliers in  
the world, and this dummy can't even  
add."



#### How the Throttle Valves Are Milled in Little Giant Drills.

The compressed air for pneumatic tools which are held in the hand during their operation, are controlled by a cam cut in a sleeve which goes over one of the handles, giving the operator full control of his machine by a slight twist of the hand. A very ingenious fixture for milling two entirely different cams is shown above. One of these blocks is a perfectly plain cam, while the other has a reverse slot, both of these being obtained by a clever device.

As will be seen, the cam cylinder A has two slots, the guiding pin B entering either of these slots according to the position of the slide of the fixture C, which carries the cam as well as the work. The index pin D locates the slide in either position, allowing at the same time perfectly free end movement for the cam and the work being milled.

As these cams are in the reverse direction, it is easier to make them to bear against the guiding pin C on the high or concave side of the slot. In order to accomplish this the springs E and

F were provided at the end of the cam roll, so as to be able to hold it against either the right or left hand side of the guiding pin, as might be desired. In this way it becomes easy to throw either spring into action, these being easily controlled by the knurled nuts G and H, the spring E being in action in the cam shown, while for cutting the cam at the other end of the handle, this spring would be relieved and the other spring thrown into action.

The lever at the left is simply for throwing the slide I, carrying the work from one position to the other, the speed for milling and for securing the block of the desired shape being secured by the ball handle and the worm and wheel shown. This makes an interesting little fixture, and there are doubtless many places where a modification of this would be found useful.

#### Fixed.

"Has Dinny got a stiddy job yit, Mrs. Mulcahey?" asked Mrs. Brannigan.

"He has that," said Mrs. Mulcahey. "They've sint him to the penitinchery for twenty years."—Harper's Weekly.

**Checkmated.**

A young Irishman, in want of a five-pound note, wrote to his uncle as follows:

"Dear Uncle—If you could see how I blush for shame, while I am writing, you would pity me. Do you know why? Because I have to ask for a few pounds, and do not know how to express myself. It is impossible for me to tell you; I prefer to die. I send you this messenger, who will wait for an answer.

"Your most obedient and affectionate nephew."

"P. S. Overcome with shame for what I have written, I have been running after the messenger in order to take the letter from him, but I cannot catch him up. Heaven grant that something may happen to stop him, or that letter may be lost."

The uncle was naturally touched, but was equal to the emergency. He replied as follows:

"My Dear John: Control yourself and blush no more. Providence has heard your prayers—the messenger lost your letter. "Your affectionate Uncle."

**Knew it Well.**

A man who had been troubled with bronchitis for a long time called on a rather noted doctor. After a few questions the doctor told him he had a very common ailment that would readily yield to treatment.

"You're so sure you can cure my bronchitis," said the man, "you must have had great experience with it."

"Why, my dear sir," confided the doctor, "I've had it myself for over twenty years!"—San Francisco Argonaut.

**You Know This Kind.**

"What's the price of this silk?" asked a deaf old lady.

"Seven shillings."

"Seventeen shillings!" she exclaimed. "I'll give you thirteen."

"Only seven shillings, ma'am, shouted the honest shopman.

"Oh, seven shillings!" rejoined the lady sharply. "Well, I'll give you five."

**Brain Capacity.**

Sherlock Holmes says: "I consider that a man's brain originally is like a little empty attic, and you have to stock it with such furniture as you choose. A fool takes in all the lumber of every sort that he comes across, so that the knowledge which might be useful to him gets crowded out, or at best is jumbled up with a lot of other things, so that he has difficulty in laying his hands upon it. Now the skilful workman is very careful indeed as to what he takes into his brain-attic. He will have nothing but the tools which may help him in doing his work, but of these he has a large assortment, and all in the most perfect order. It is a mistake to think that that little room has elastic walls and can distend to any extent. Depend upon it, there comes a time when for every addition of knowledge, you forget something that you knew before. It is of the highest importance, therefore, not to have useless facts elbowing out the useful ones."

**Still Hope.**

Mrs. McGinty had waited long and patiently for her husband to come home on Saturday night with his week's pay. Finally she decided to take the matter in her own hands, and she sallied forth to the police station to inquire if he was there:

"Is my Tim here?" she asked.

"No," replied the lieutenant; "but sit down; we're expecting him every minute."—Lippincott's.

A traveler who believed himself to be sole survivor of a shipwreck upon a cannibal isle hid for three days in terror of his life. Driven out by hunger, he discovered a thin wisp of smoke rising from a clump of bushes inland, and crawled carefully to study the type of savages about it. Just as he reached the clump he heard a voice say: "Why in hell did you play that card?" He dropped on his knees and, devoutly raising his hands, cried:

"Thank God they are Christians!"—Everybody's.



Spot cash isn't always spotless cash.

Many a rich girl makes a poor wife.

We want cheap ice—we have plenty of cheap skates.

It won't help to make a long face when you are short.

And a woman is known by the acquaintances she cuts.

And many a good husband hasn't the nerve to be otherwise.

Bachelor maids are spinsters who haven't given up hope.

Always try to keep your heart a little softer than your head.

The less a man knows about a woman the more wisdom he has.

Few folks look into mirrors to see if their morals are on straight.

Some men never weary of talking about the things they used to do.

Those who never have any luck are the ones who believe in it most.

Every time a girl goes away from home she has a perfectly lovely time.

Jumping at conclusions is about the only mental exercise some people take.

Some people act foolish and then get sore because their neighbors find it out.

Anyway, the man who wants the earth gets a lot of mud thrown at him.

Before attempting to make a name for herself a girl should learn to make bread.

What has become of the old-fashioned woman who had a bad omen for every dream?

If a man is always making new friends it's a sign that his old friends are on to him.

He who reads will run against a lot of information that he who runs will never read.

Some men are like hitching posts—they are steady enough, but they never get anywhere.

Some wives feel the need of an excuse for being married, and some spinsters for not being.

A woman seldom hits anything she aims at—especially when she throws herself at a man's head.

It sometimes happens that a boy learns some very good habits by not following in the footsteps of his father.

The giddy old world laughs openly at a man and wife who are in love with each other—but secretly it envies them.



# Pneumatic Rammers

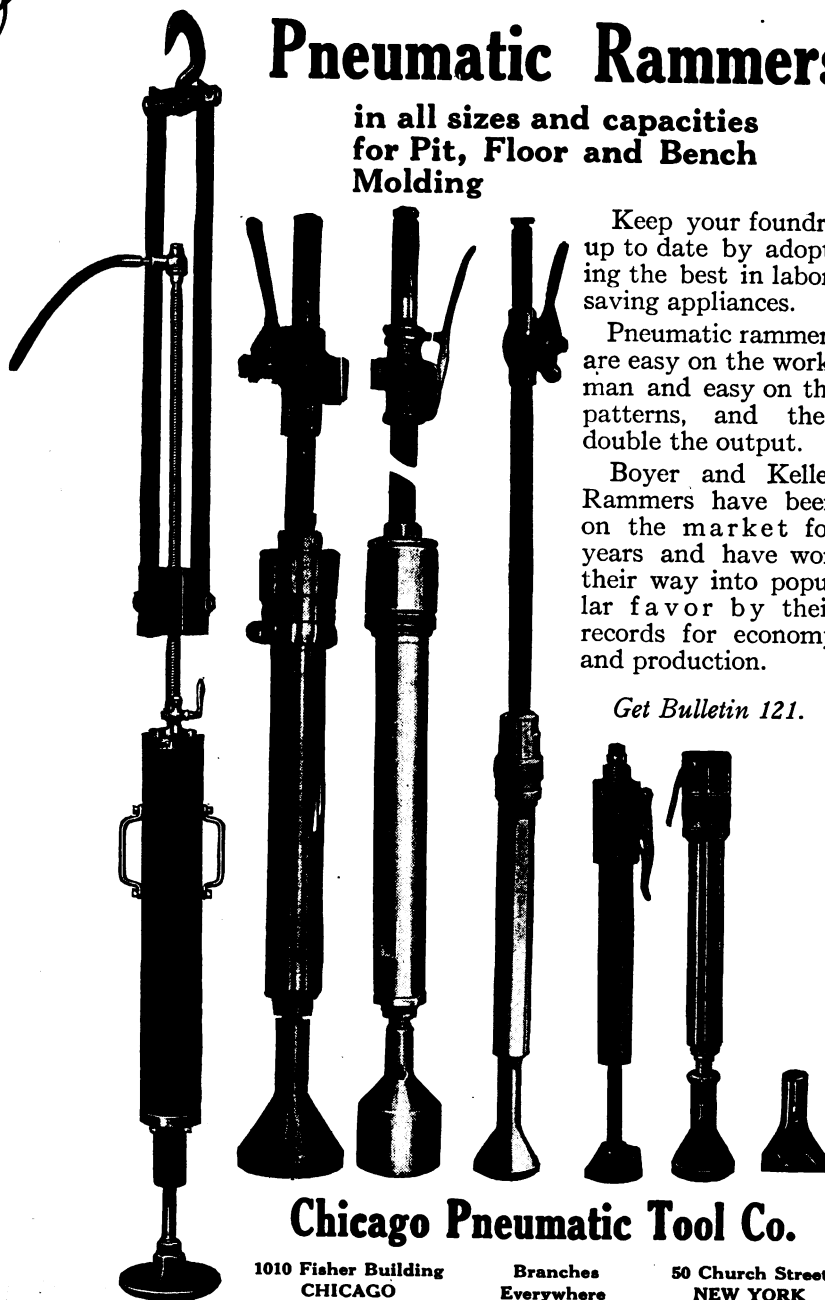
**in all sizes and capacities  
for Pit, Floor and Bench  
Molding**

Keep your foundry up to date by adopting the best in labor-saving appliances.

Pneumatic rammers are easy on the workman and easy on the patterns, and they double the output.

Boyer and Keller Rammers have been on the market for years and have won their way into popular favor by their records for economy and production.

*Get Bulletin 121.*



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No. 8.

## A Modern Boiler Manufacturing Plant

One of the most up-to-date manufacturing plants in the northwest is that of the William Bros Boiler and Manufacturing Co., located on Nicollet Island, Minneapolis, Minn. The photograph shows the boiler shop proper and the warehouse attached at right angles to same.

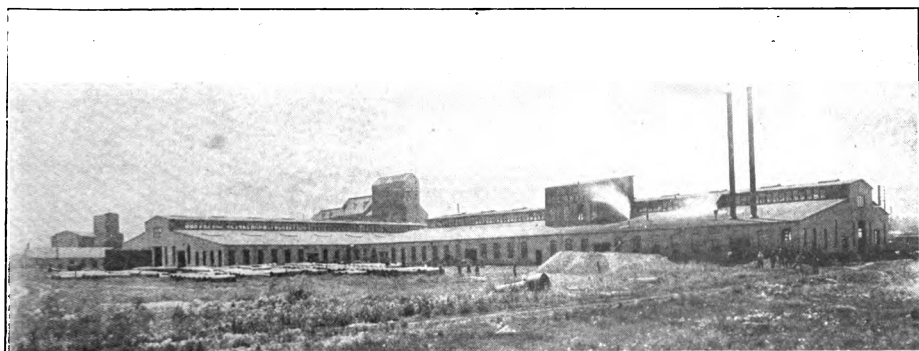
The boiler shop at the right is 160 ft. wide and 300 ft. long. The warehouse at the left is 200 ft. wide and 300 ft. long and is connected with the boiler shop at right angles at about the middle.

The cylinders on the ground at the left in front of the warehouse are pneu-

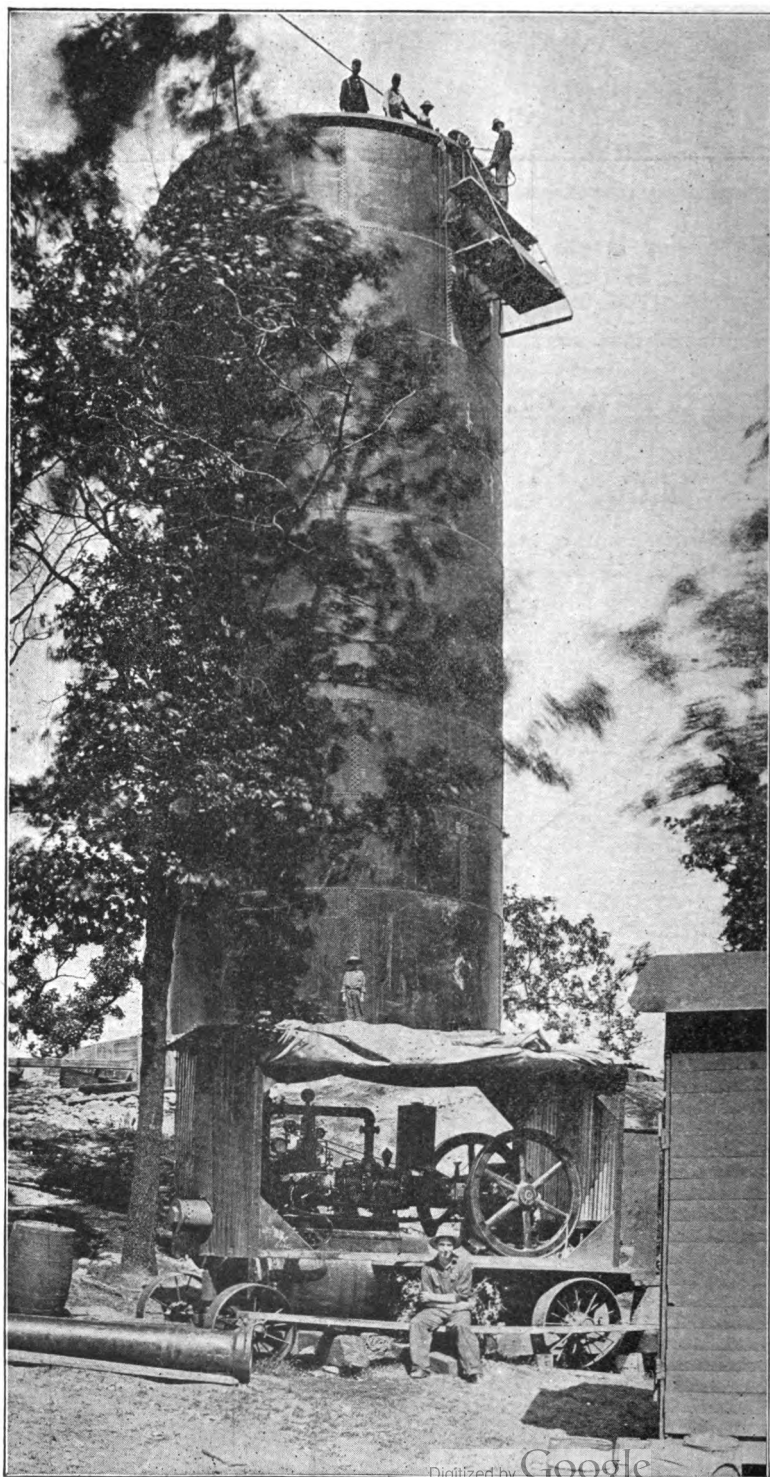
matic and gasoline tanks made up for stock.

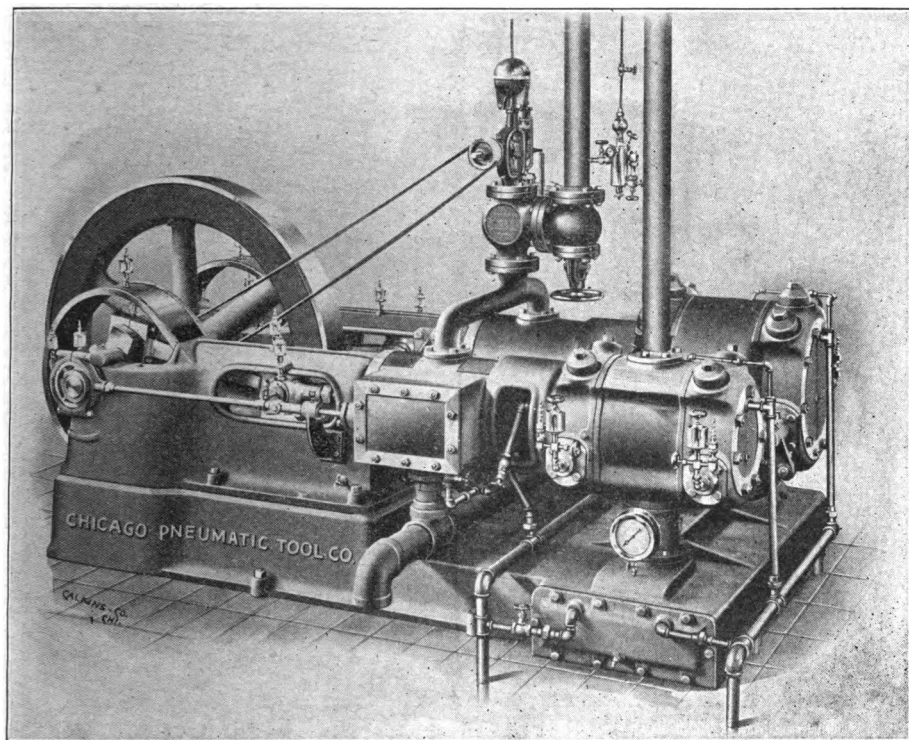
The boiler shop is equipped with hydraulic riveters, punches, flange presses and shears; also two electric cranes running full length of the shop. The warehouse is equipped with three electric cranes, running the full length of the shop, and covering two lines of railroad tracks.

The pneumatic equipment consists of one "Chicago Pneumatic" Class G-CSC compound steam, two-stage air compressor (code word Mandalay), a full line of Boyer riveting, chipping and calking



Boiler Shop and Warehouse of Wm. Bros.' Boiler and Manufacturing Co., Minneapolis.





"Chicago Pneumatic" Class G.-C. S. C. 690-ft. Compressor. Code Word Mandalay—Used by the Wm. Bros. Boiler & Mfg. Co.

hammers, Little Giant Drills, staybolt drivers and hoists. A full line of Duntley electric drills is also in service.

The building at the rear on the left shows part of the foundry.

The William Bros Boiler and Manufacturing Company owns and operates two "Chicago Pneumatic" Gasoline Engine Driven Compressors, code word Gastenen, one of which is shown on the opposite page, erecting a large water tank for the city of Minneapolis.

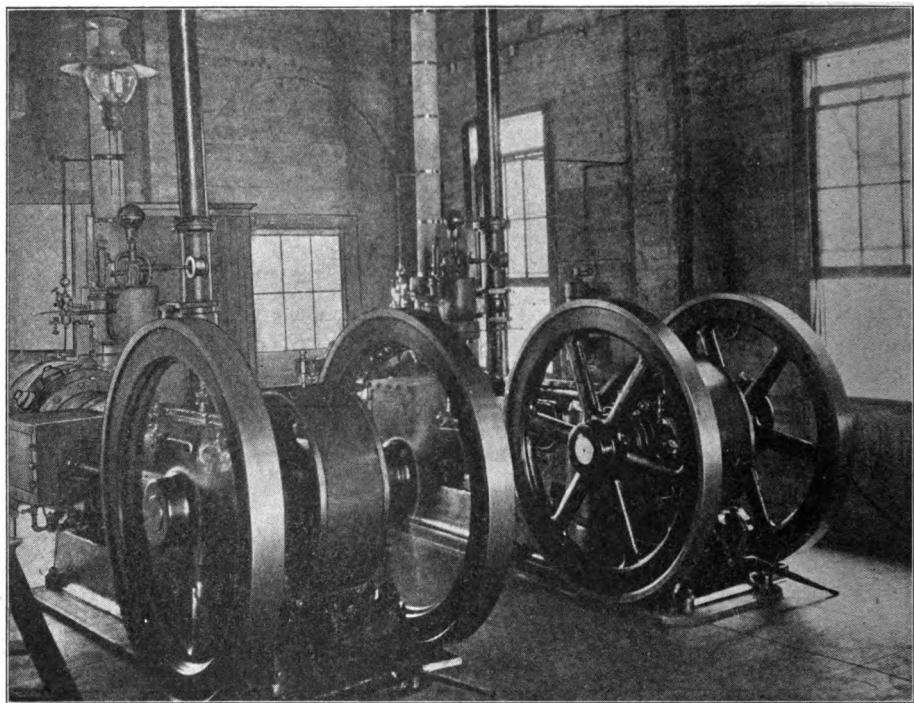
#### Care of Pneumatic Drills.

By H. J. Kimman, Manager Cleveland Plant, Chicago Pneumatic Tool Co.

After running his locomotive from 100 to 150 miles a trained engineer climbs down from his seat and proceeds to count all the wheels. He feels all the rod connections and sees that they have oil; and if he has heard any un-

toward noise or clatter during his little journey he burns up the telegraph to tell his chief about it.

Now the locomotive has not done much of a stunt. It has only made about 30,000 turns allowing for some slip, and, by the way, if this engineer slips it too much he gets a lay-off. Now a pneumatic drill is some machine when compared with this ponderous locomotive, to which some of the most eminent engineers in the world devote so much time and thought. A pneumatic drill in the hands of the most inexperienced help will, when used on reaming holes in this big locomotive's boiler make to exceed 1,000,000 turns in a day of ten hours, and no one to count the wheels. Now, if a locomotive made a million turns it would have run 3,300 miles and spent about two weeks on the job, and half the time in the round house. The



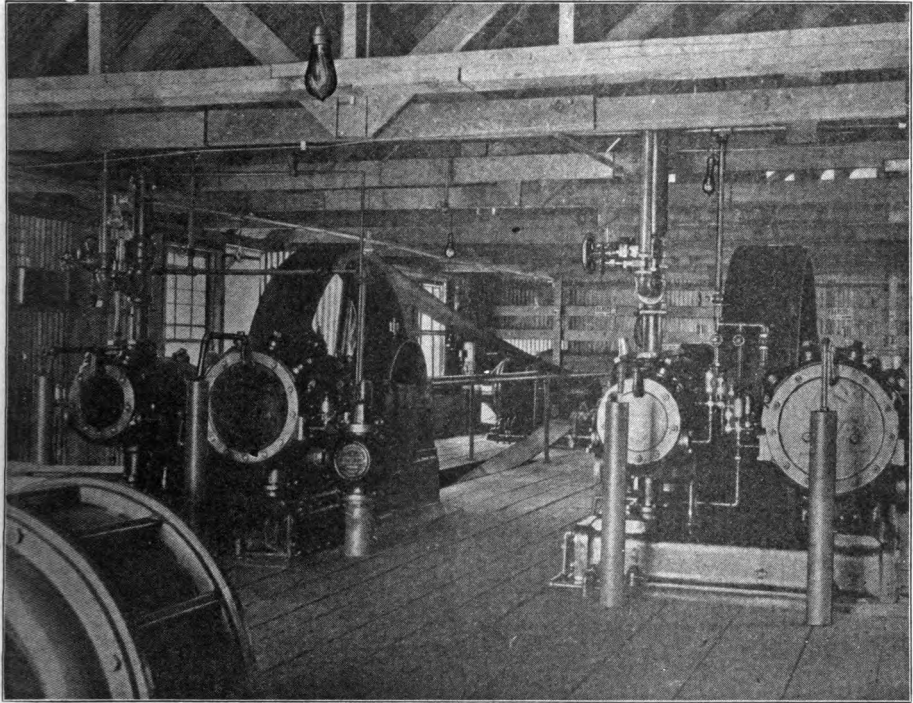
Two "Chicago Pneumatic" Steam Driven Compressors, used by the Southern California Gas Co., Los Angeles, Cal., for compressing artificial gas. This company is using "Chicago Pneumatic compressors exclusively, now having eight (8) in service. Note that one of the compressors was running while the photo was taken.

pneumatic drill is an engine, as fine an engine as any other type. Why not give it a little of the care which railroads are expected to give their engines? We believe it would repay you in service.

The price of your product, Mr. Manufacturer, to some extent depends on the endurance of ours. Why not strive by timely care and watchfulness to increase the life of ours and so cheapen yours. You may think that you give these drills the best of attention, but do you? The writer himself has seen many varieties of the care that is bestowed on pneumatic drills. He has in mind a large shop, a sheet iron soft coal burning stove, both doors open and a nice big dirty fire inside, immediately adjoining a rack on which drills are kept, the ashes from the stove covering the drills.

And now a word about grease. How long would a locomotive run if at uncertain intervals, averaging once a week, it was treated to a mess of grease of the consistency of putty (and just about as efficient as a lubricant). Grease with a fancy name and no lubricating value in proportion to its mass—grease which a shipbuilder would hesitate to smear his ways with for fear the ship would stick, and this little engine is expected to digest it or go without. We are not so old but what we can remember when a locomotive had a tallow cup and every time the engine stopped, the engineer would give it a dose of tallow, and it was nothing unusual for a shop machinist to find cylinder and especially valve seats honey-combed by the action of this tallow, and then it was chip and file to make a new valve face.

Now why expect of this little engine



Two "Chicago Pneumatic" Two-Stage Compressors, driven by belt from electric motors. Used by the Stone & Webster Construction Co. to furnish air for Chicago Giant Rock Drills in excavating for dam foundations and in driving 27,000 feet of tunnel at Big Creek, Fresno County, Cal.

the things your big one could not do? An Eskimo thrives on tallow, a locomotive dies on it, and a pneumatic drill resembles a locomotive, not an Eskimo. It has a delicate appetite. It requires the best of heavy oil applied at frequent intervals, quite unlike the Eskimo who, when he eats, eats all at once and then perhaps not again for a week. Now, if you want the best work from pneumatic drills treat them right—give them the things they like. There may be cases when it pays to ruin a good machine to accomplish the work demanded of it; however, these are rare.

We have read of instances where riders have run a good horse to death, but accomplished the end aimed at. Under these conditions you do not blame the horse, while you praise the rider. You do not condemn a match

after lighting has served its purpose. You are satisfied to throw away the stub. Now, when you work the little drilling engine as the horse or the match, that is to say, work it to death, why blame the machine if it has served your purpose as the match has. You have burned them both up, why not be consistent and when you say this was a good match, also say "it was a good drill."

#### Diagnosis.

A young lady complained about the way her sweetheart treated her.

"Why don't you give him the mitten?" said her chum.

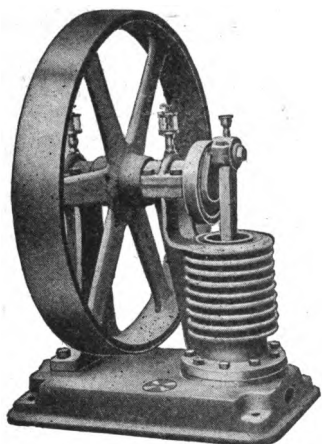
"Mitten nothing," responded the forlorn one. "He doesn't need the mitten. I had better give him a pair of socks; he's getting cold feet."



### Caldwell Air Cooled Air Compressor The Ideal Compressor for the Garage.

"Chicago Pneumatic" Air Compressors are built in capacities from 31 cubic feet per minute upward. For machines of less capacity, the Chicago Pneumatic Tool Co. is offering and recommending the well known Caldwell make.

These Compressors were designed to supply the demand for a small but substantially built compressor below the average capacity usually furnished.



Caldwell Single Cylinder Air Compressor.

The air cooled feature has proved absolutely satisfactory and is on exactly the same principle as employed by the manufacturers of air cooled automobile engines.

It is not necessary to use a water tank or water pipe connections, making a saving in the cost of installation and doing away with all danger of freezing in the winter.

These compressors are used in garages for inflating tires, cleaning cushions, cleaning inaccessible parts of engines and for operating soldering and brazing furnaces.

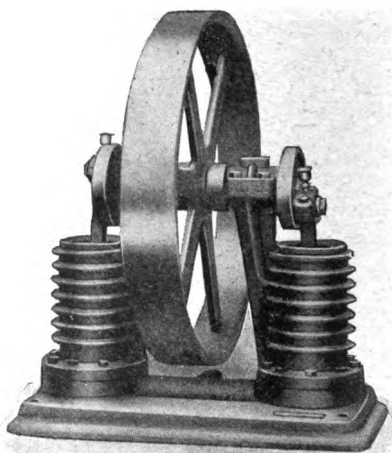
They are used in small foundries for operating small molding machines, vibrators, etc.

All connecting rods are fitted with

phosphor bronze bushings and adjustable crank pin bearings.

Crank pins and piston pins are hardened steel.

All sizes can be used as vacuum pumps by connecting up inlets.



Caldwell Double Cylinder Air Compressor.

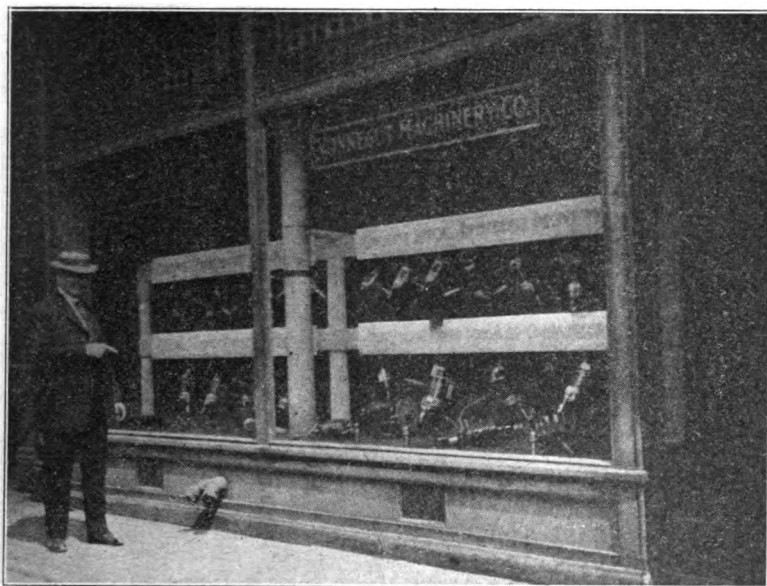
They are made in six sizes and styles as follows:

No.	Style.	Cu. ft. per Dia. of minute cylinder Stroke		
1	Single cyl.....	4	3½"	4"
2	Single cyl.....	6	4"	5"
3	Single cyl.....	12½	5"	6"
21	Double cyl.....	8	3½"	4"
22	Double cyl.....	12	4"	5"
23	Double cyl.....	25	5"	6"

For further information write the Chicago Pneumatic Tool Co.

### A Stitch in Time.

In a New Jersey suburb the town officers had just put some fire extinguishers in their big buildings. One day one of the buildings caught fire, and the extinguishers failed to do their work. A few days later at the town meeting some citizens tried to learn the reason. After they had freely discussed the subject one of them said: "Mr. Chairman, I make a motion, that the fire extinguishers be examined ten days before every fire."



#### Vonnegut Window Display.

This photograph shows one of the recent window displays of the Vonnegut Machinery Co., Indianapolis. This window is literally filled with Chicago Pneumatic Tool Company's pneumatic hammers and drills, and Duntley electric drills and grinders of every description.

The Vonnegut Machinery Co. uses its windows to good advantage by periodically giving some manufacturer an exclusive display of its product. They claim that better results are obtained in this way than filling the window with a miscellaneous display, representing various manufacturers.

#### Expected Due Warning.

An Italian working with a construction gang in New Mexico was warned to beware of rattlesnakes, at the same time being assured that they would give the warning rattle before striking.

One hot day he was eating his lunch on a pine log when he saw a big rattler coiled a few feet in front of him. He eyed the serpent and began to lift his legs over the log. He had barely got them out of the way before the snake's fangs hit the bark beneath him.

"Son of a gunna!" yelled Pietro. "Why you no ringa da bell?"

#### Improving an Opportunity.

They were talking about improving an opportunity the other afternoon, when Secretary of the Interior Lane contributed to the conversation.

"Makes me think," he smilingly said, "of a youngster who lives in our town. One afternoon he was invited to a party, where, of course, refreshments were bountifully served.

"'Won't you have something more, Willie?' asked the pretty hostess toward the close of the feast.

"'No, thank you,' replied Willie, with an expression of great satisfaction. 'I'm full.'

"'Well, then,' smiled the hostess, 'put some fruit and cakes in your pockets to eat on the way home.'

"'No, thank you,' same the rather startling response of Willie. 'They're full, too.'

#### Wives and Women, Please Note.

Lots of fool women think that they are getting even by refusing to fix breakfast for "hubby" when he has been out almost all night. But when a man has been out all night he would just as soon shake hands with a flock of red, white and blue snakes as eat breakfast.



Hart Cedar & Lumber Company's Rockford Motor Car—Rockford Cars Are Now Built With Steel Frames Instead of Wood, as Shown.

### Logging With a Rockford Motor Car.

The Hart Cedar and Lumber Co. of Hart, Mich., are logging a 2,000-acre tract of timber which is very hilly, and in order to cover the territory they are obliged to have a great number of tracks through the various valleys. In some places it is as much as a quarter of a mile from one skidway to another in a straight line, and a mile and over by track. Under these conditions they have found their Rockford motor car of inestimable value in transporting men and tools. They cover the ten miles of track from headquarters at Hart to the woods in thirty minutes, and are advised of the condition of the track and roadbed at all times. The Rockford motor car is a first aid in any breakdown, as they can get repairs and tools to the woods in a half hour's time.

But even if a man has no ax to grind, he can usually get a job turning the grindstone for some one who has.

### Blood Is Thicker than Water.

In a speech in the Senate on Hawaiian affairs, Senator Depew, of New York, told this story:

When Queen Liliuokalani was in England during the English queen's jubilee, she was received at Buckingham palace. In the course of the remarks that passed between the two queens, the one from the Hawaiian Islands said that she had English blood in her veins.

"How so?" inquired Victoria.

"My ancestors ate Captain Cook."

### No Success.

Stranger: "Call your paper a great advertising medium, do you? Isn't worth anything. I put in an advertisement last week and didn't get an answer, not one."

Editor: "What's that? How was your advertisement worded?"

Stranger: "A poor young man wants a pretty wife who can do her own housework."



A Logging Train of the Hart Cedar & Lumber Company—The Rockford Motor Car Is Indispensable in Logging Operations.

#### Moving Pictures of Flying Bullets.

Moving pictures have unlimited possibilities apparently for the study of rapidly moving objects. An apparatus capable of making pictures at the rate of 100,000 a second has been made. With it seventy-two pictures of a revolver bullet were taken while moving ten inches. Pictures of a bullet passing through a stick of wood showed a curious condition. The bullet passed completely through the thin stick and was well on its way beyond before the wood gave any sign of distress. Then some tiny splinters started out, following the bullet; the stick began to split, and after the bullet had proceeded some distance the stick suddenly fell to pieces. No camera shutters are fast enough to take pictures at anything like this speed, so no shutter was used. Instead, a series of electric sparks was flashed, the sparks following one another at the rate of 100,000 a second, each spark making a picture. The film was mounted on a wheel about three feet in circumference,

and the wheel was revolved at the rate of 9,000 revolutions a minute. When all was ready, the bullet was shot, the spark flashed and the wheel revolved, the actual exposure being limited to a fraction of a second so as not to pile up pictures one over the other.

#### A Word from Elbert.

If you work for a man, in Heaven's name work for him. If he pays you wages that supply your bread and butter, work for him—speak well of him—stand by him—stand by the institution he represents. If put to a pinch, an ounce of loyalty is worth a pound of cleverness. If you must vilify, condemn and eternally disparage, why not resign your position? And when you are outside, damn to your heart's content; but as long as you are part of the institution, do not traduce it.—Elbert Hubbard.

This is a sour old world for a man with a sour disposition.

# IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air  
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.

1014 Fisher Building

CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. 10 NOVEMBER, 1913. No. 8.

## TERMS OF SUBSCRIPTION

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Other Countries in Postal Union, 50 cents per year

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Send 25 cents and have your name put on our  
subscription list.

## Romance and Rivets.

Much has been written about the romance of the city. Artists have sketched the upbuilding skyscrapers and have found lines of beauty in these gaunt monuments to the determination of the twentieth century to eclipse every other. In the spiderweb of steel which is the skeleton of the skyscraper, these modern romanticists see a kind of rough uncouth majesty and virile poetry. But did they ever spend a week or even a day within 100 feet of one of these spiderwebs when it was in course of construction?

In the evening, when the stark lines of the structure are darkly mysterious, dreamers may see the romance of big buildings. During the daytime there is no romance; there can be no romantic thoughts where is a headache. And no more effective weapon for producing a throbbing pain in the head than the steam hammer has been found.

In the days when time did not press as it does in this busy era, the worker swung his hammer. He paused from time to time and moistened his hands, in a primitive way. Then he swung again. The nerves of the unwilling Hstener had opportunity to recover their poise and entrench against the next assault. But now the pneumatic hammer beats a cacophonical volley of sharp, penetrating explosions, diabolical in their insistence. These skyscrapers may be romantic when they are farther away.

So muses the Detroit News-Tribune.

We offer as a palliative the thought that before the advent of the pneumatic hammer, it took months and months of laborious effort with plenty of noise in between and spread all over, to perform the work that is now done in a few weeks at the most. We are now getting the noise all at once; that's all. But isn't it worth it?

## The Two Greatest Moments.

(For Married Men Only).

By The Editor

The day has its sunshine, its storms and its showers

The night has its dreams and its rest,  
But the moments are two in-the cycle of hours

That I think are the sweetest and best.

From sunset to sunrise, from morning till night

There's a sequence of pleasure and strife,

But the moments are two that set things aright

And give them the meaning of life.

One makes you a hero with iron bound heart,

With loins girt for war, unafraid,—  
Compels you to conquer in workshop or mart

And bids you return undismayed.

The other invites you to lay down arms

And enlist in the army of peace,  
And bivouac softly 'mid love's soothing charms

Bidding care, toil and battle to cease.

Two wonderful moments—so distant, so near,

One calling, one bidding you roam,—  
Their spell lingers long on the threshold so dear

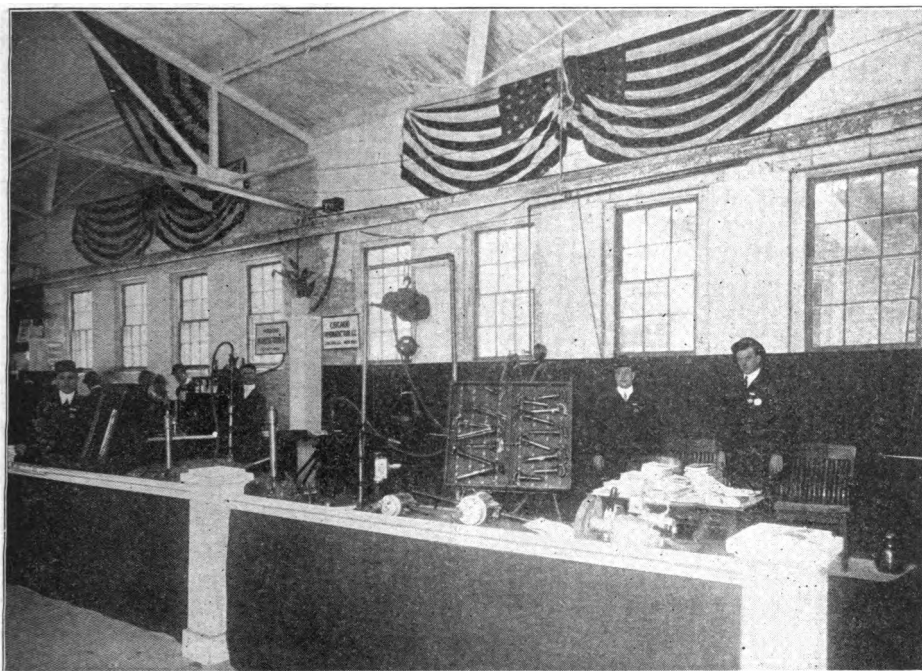
Of that glorious mansion called home.

O would that their blessing could ever adorn

My fast fleeting years in their flight—  
The god-speeding kiss my wife gives me at morn,

And her welcoming kisses at night.

(Yes, Cordelia, the Editor, is married.)



View of the Chicago Pneumatic Tool Company's exhibit at the International Amphitheater, Union Stock Yards, Chicago, during the Foundry and Machine Convention, October 14-17.

### Sun-Power Plant Demonstration in Egypt.

A public demonstration was given on July 11, 1913, of the workings of the sun-power plant recently erected by a New York concern at Meadi, near Cairo in Egypt. The principle involved in the plant is the invention of Frank Shuman, an American who supervised the erection of the plant and is conducting the experiments.

The plant covers several acres of land on the west bank of the Nile. A series of reflectors and absorbers, a low-pressure steam engine, a condenser, and a pump comprise the principal independent units of the mechanism.

There are five reflectors, each of which is 204 feet long and parabolic in form. They are spaced at intervals of 20 feet and made up of a series of  $\frac{1}{8}$ -inch glass mirrors. The reflectors aggregate a total light absorptive surface of 13,500 square feet, are placed in iron frames,

and geared and interconnected with the engine by an arrangement of cog wheels. The mirrors automatically follow the course of the sun and are regulated by what is termed a thermostat, the secret of the invention.

Running exactly 'down the center of each reflector is the boiler or absorber, a box of  $\frac{3}{8}$ -inch metal with a tube at the top. By means of an automatic feed the box is constantly half full of water. The reflected sun rays are concentrated on these boilers and the steam generated is led from the various units to the engine. The 100-horsepower engine is of the low-pressure type. The exhaust is condensed to water and returned to the boilers.—Daily Consular Report, Oct. 22, 1913.

"What's the matter with this violin?"  
"It's a little flat."

"So's the beer—they've both been standing too long."

## Machinery *versus* Horseflesh

Written specially for *Ideal Power* by C. C. McKinney, Western Representative,  
*Commercial Car Journal*

Your belief in progress—in the building up and conservation of business—belief in modern business methods and in the business future of this country—these are a few reasons why you believe in modern transportation methods. And it is your belief—your optimism and your ready acceptance of modern business methods that make it possible for a new industry to thrive.

The motor truck industry has now assumed such proportion that it is viewed by everyone as a successful institution. But it has been a hard, laborious work to educate merchants to the employment of machinery as against the horse method of delivery. Horses have been with us since the beginning—the motor truck but a few years, and it is but natural that the introduction of commercial motor cars should be a work of tedious, educational character. After years of hard work by the pioneers of the industry, we find ourselves in the midst of an all motor era and it appears that the commercial end will eventually overshadow the wonderful pleasure car division of the motor industry. It is interesting to note the increasing numbers of truck makers from year to year, especially the old horse-drawn wagon-maker who has been forced to enter the motor industry or else close up shop. Horse doctors are disappearing and the harness business is not quite as brisk as formerly. We are not going to lose the horse quickly, but in a slow and gradual manner and this is far better than to jump too quickly. All good things come slowly and the motor wagon industry is the best indication of sureness on the part of the American people. But once we see 51% truck and 49% horse, we immediately begin to think in motor truck terms and then will we see a quick and decisive action on the part of the American busi-

ness man to motorize his deliveries, if he has not already gotten into line.

Let your memory go back to old business methods, or rather let us make a few comparisons of the old and new in the business world. For instance, the old money-drawer and the new cash register, the pen and ink against the typewriter, the brain versus the adding machine, the ox-cart and the 20th century train of today, the broom and the electric suction sweeper. There are so many superb comparisons that it would take pages to remind you of them. Now enter the motor truck—the speedy, dependable, efficient, never-tired, reliable and economical machine to deliver the world's goods. Can you doubt for an instant its failure as a business asset of supreme importance? There will come that time, and it is not far distant when you will recognize with approval the progressive business man who delivers your goods by motor—and you will, unconsciously, withdraw patronage from one who fails to keep abreast of the times. We live in an age of progress. We do not stand still or permit things that do stand still about us. We are but human. The modern motor truck stands for progress, for economy, for efficiency, for reliability and for dependability. If there were no more reasons, these would be all sufficient for the existence and gratifying condition of the truck industry today.

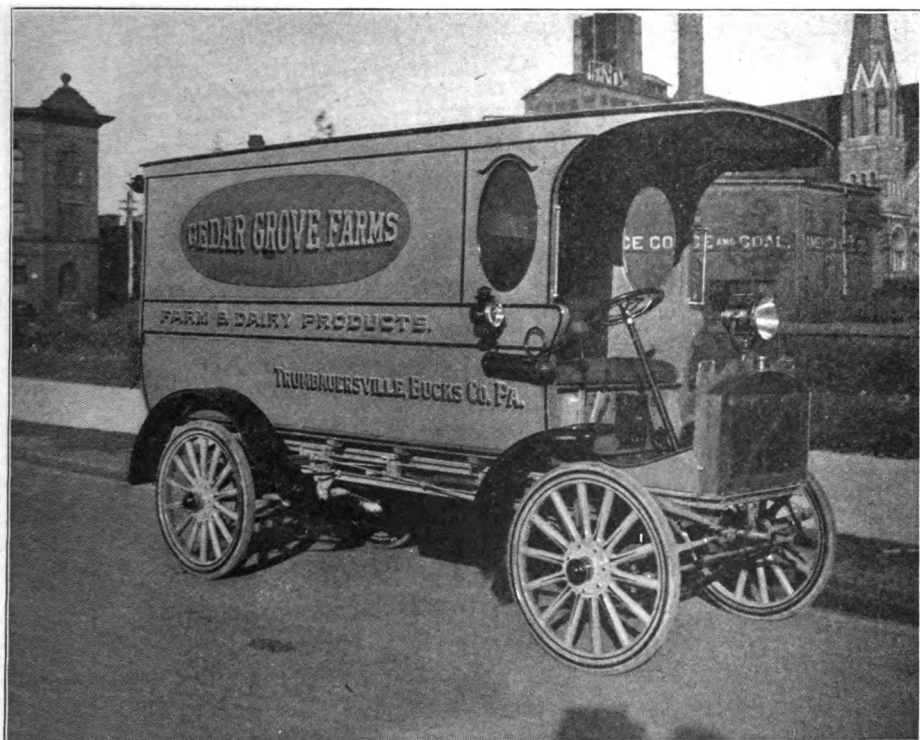
Motorize your delivery and transportation departments. It pays and that's what you want if you are human.

C. C. MCKINNEY.

### Sarcasm Up-to-Date.

"Why is he so bitter at the girl he was only recently engaged to?"

"Because when she sent the ring back she labeled the box, 'Glass—with care!'"  
—September Lippincott's.



Above is a photograph of a Little Giant Truck, owned by the Cedar Grove Farms, Trumbauersville, Bucks Co., Pa., which is every day of its life disproving the claim of so many merchants, that a car will not pay them, because they have too many stops. Mr. H. H. Trumbauer, the owner of this car, has a large butter and egg business, both wholesale and retail, and the average day's work for this car is about seventy deliveries—Friday, his largest retail day, it goes as high as one hundred and thirty-five.

This car is not only doing the work of three double teams, but saving time as well. Previous to the purchase of his Little Giant, Mr. Trumbauer left on Fridays at six in the morning and was well satisfied if he got home at ten at night. On a test we left at 7:30 a. m., and, covering exactly the same route, were back at his home at 4:30. Then, just for good measure, we put on a load and started for one of his farms thirty-five

miles away, and made the run in a little over two hours.

If this is not enough to upset the argument of the merchant who has too many stops, we could cite the case of Mr. John F. Baker of this city, who has been doing practically the same thing with a Little Giant for over two years.

Here is another angle, Mr. Trumbauer finds that his car is bringing him new business every day. It is one of the handsomest cars running in Philadelphia today, and people are not only attracted to it by its appearance, but like to have it stop in front of their place. Mr. Trumbauer had planned to use his car four days in the week—he is already using it every day except Saturday afternoon.

Now just a word as to the car itself. It is, as we said, one of the handsomest cars in the city, and we firmly believe one of the handsomest Little Giants on the road today. It is a D X or 110-inch wheel base chassis, and the



loading space is 108 inches back of the seat, 40 inches wide at the bottom, swelling to 44 inches, and 60 inches high inside, giving a good big roomy body. The ice boxes for butter are located just back of the driver's seat, and are opened from the front. The entire space back of them is arranged for eggs in crates. Twenty inches from the top of the car is a sectional shelf, each section 30 inches wide, on which is carried any flat merchandise, such as mush, scrapple and sausage. The rear is equipped with a deep tail gate and a wire screen opening up, so that by leaving the gate down even with the body not only additional loading space is secured if desired, but instant access can be had to the rear.

The coloring is unique, the body is a peculiar shade of olive green, the chassis is a deep yellow, and the ovals on the side maroon, with all lettering in gold leaf. It is a car that attracts instant attention, and its owner is finding that it is bringing a lot of new business his way, too.

### The Origin of the Menu.

The menu, so indispensable to the ordering of a satisfactory dinner to-day, had its origin in the twelfth century, the first person to use it being Prince Henry of Brunswick. At a large banquet he was seen to consult from time to time a long paper at his side, apparently attached to the under side of the tablecloth and rolled back. One inquisitive guest at length made bold to inquire what study he might be engaged in at that apparently unseasonable time, and Prince Henry explained that it was a paper on which he had noted down the details of his dinner and that he wanted to be sure that all his instructions had been carried out.

The simplicity of the idea struck the fancy of the guests and from that time the menus became the fashion. In its primitive form it was of such dimensions as to resemble a wall map and was given a position at each end of the table, the guests at the banquet being permitted to consult it.

### Things Worth Thinking About.

The following sentences are from the address which Herbert N. Casson delivered not long ago at a mass meeting in Worcester.

"Some people look like people, but they are not. They are habits. You have to think different things or you do not think. A person that thinks always the same things and does the same things dies in his tracks.

"Many men are optical illusions. You think he is a man, but it is his clothes. Away back in his history he died, and he don't know it.

"How many buttons are there on your coat sleeve? You don't know because they are too close to you. You are blind to the things you have around you every day.

"I went into a store the other day and said to the proprietor, 'I wonder where the middle of your store is.' He said he thought it was about forty feet away from where he stood. I took him to the door and stood in the door-step and said, 'This is the middle of your store. Why don't you dress your windows? Your first duty is to bring people in. Here you are on Broadway and you don't know it.'

"A man asked how many people worked in my office and I said, 'about half of them.' We don't have the swing and the go. A big corporation is an excuse for a lot of men falling down on their jobs.

"The professors of Harvard and Yale talk about demand and supply. So nice in a book. This is demand. This is supply. That is not true. Demand is a rabbit and I am a fox. I will get after the rabbit and get him. You have to create the demand. Nobody will find you out unless you do it."—The Upholsterer.

Miss Curves sued an old man named Drury,

And she made an appeal to the jury;

She said that one limb

Had been injured by himb.

But the jury men were from Missouri.

### Compressed Air and Corns.

And now the corn doctors are using compressed air, as the following dissertation borrowed from the Emerson Monthly will show:

"No chiropody office can be termed strictly up-to-date unless all the paraphernalia necessary in the treatment of foot troubles be included in the equipment, and an air compressor is certainly one of the most necessary adjuncts.

"In the first place, as soon as a foot is presented to the chiropodist, he immediately sprays it thoroughly with some antiseptic solution, such as a 2½ per cent carbolic solution, or a 1-2000 bichloride of mercury solution, thereby minimizing the danger of infection.

"He begins to cut away the corns and other excrescences, and in so doing encounters one or more raised capillaries which immediately begin to bleed—not copiously, but still enough to alarm most patients.

"If the chiropodist knows the ropes, he will at once apply the compressed air directly over the slight hemorrhage, and in a moment or two coagulation will have set in, and the abraded skin thoroughly sealed before even the patient is aware that there has been a hemorrhage.

"Compressed air is aseptic from the fact that micro-organisms cannot live therein, hence there can be no danger of introducing germs into the wound by the direct application of compressed air.

"Most chiropodists, after they have removed an ingrown portion of nail from the groove of a sore toe, insert pledgets of cotton therein for the purpose of absorbing the moisture and drying the groove.

"This in many instances is a painful procedure and could well be abolished, the same purpose being accomplished painlessly by simply blowing the compressed air into the groove. In an instant the groove will be dry in the same manner as a cold wind will dry the sidewalks after a rainstorm.

"In cases of inflamed corn or bunion which have just been painted with iodine, the stream of compressed air blown

thereon forces the medicament into the skin, with the result that the therapeutic action is quicker and more effective than if simply allowed to dry thereon.

"In abscesses or sinii, where a caustic such as pure carbolic acid has been employed to destroy the lining membrane, a most favorable result can be obtained by forcing a stream of compressed air into the cavities."

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### The Trembling Pillar at Rheims.

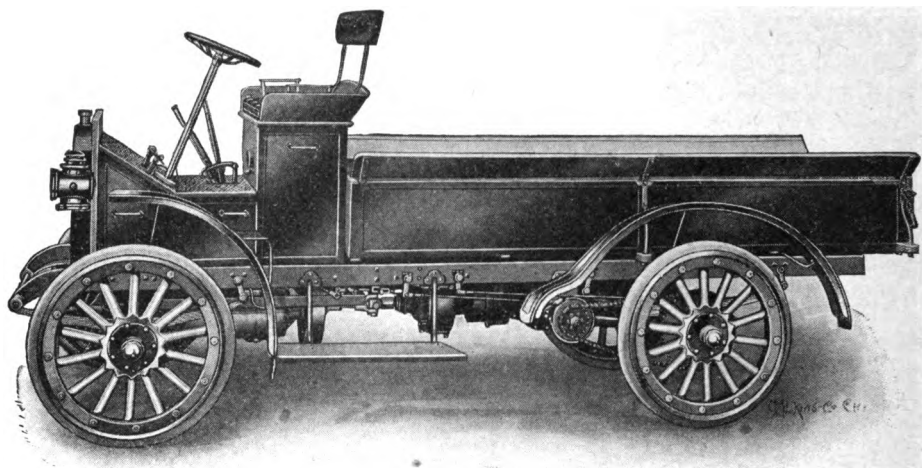
The "trembling pillar" at Rheims presents a curious problem to architects. The Church of St. Nicaise is surrounded with pillars constructed to prevent the walls from straining. At the entrance of the church is a bell tower. On one of the bells in this tower the phenomenon of the trembling pillar depends. When this bell is rung or even touched the top of this pillar sways.

It goes and returns about seven inches on each side, although the base of the pillar is immovable and the stones are so firmly cemented that it seems like a solid piece of stone.

One authority, after a careful study of this peculiarity, in explanation of which no satisfactory solution is offered, states that what is most singular about the pillar is that, although the four bells are about the same distance from the trembling pillar, only one of them has any effect upon it. The others may be rung singly or all together without moving it.

In 1775 a little window was made in the roof of the church opposite the pillar. A board was placed on top of the pillar and on it were put two glasses of water. Then the bell was rung. Immediately the pillar began to sway, and at the fifth stroke of the bell the two glasses were thrown off.

The ringing of this bell has no effect on the pillars between the "phenomenal" one and the tower, nor on any of the others. But formerly it was the first pillar which swayed, then it became immovable, and some years ago the one next to it became the eccentric one.



Little Giant Commercial Car—Model "H."

### The New 1914 Model of Little Giant Commercial Car.

Owing to the demand for a four cylinder auto truck, the Chicago Pneumatic Tool Company, has incorporated this feature into the new 1914 model of the Little Giant car that is now ready for delivery.

The latest in approved designs and the best material and workmanship possible to obtain are embodied in the new Model "H" car. It is due to the distribution of overhead charges over the entire range of the company products that makes it possible to build this car at comparatively low cost and to sell it at a price far below the average.

The Model "H" one-ton truck is without doubt the best and the lowest priced one-ton truck on the market today.

In addition to the 4-cylinder feature the new model will have 4" steel channel frame and selective type transmission, three speeds forward and one reverse. Detailed specifications follow:

**Motor**—Four cylinder (four cycle); cylinders cast en bloc. Bore  $3\frac{3}{4}$  inches. Stroke  $4\frac{1}{2}$  inches. Diameter and length of front bearing  $1\frac{1}{4}$  inches by  $3\frac{1}{2}$  inches. Diameter and length of rear bearing  $1\frac{1}{4}$  inches by  $4\frac{1}{2}$  inches. Diameter and length of connecting rod bearings  $2\frac{1}{8}$  inches by  $2\frac{1}{2}$  inches. Crank shaft

forged from the best quality open hearth steel  $2\frac{1}{8}$  inches diameter. All valves  $1\frac{7}{16}$  inches diameter, mechanically operated. Valves are inclosed with removable covers, rendering them dirt and dust proof. Crank case divided at center. Flywheel bolted to flange (integral with crank shaft forging) five (5) inches diameter. Tool steel cam shaft. Cylinders, pistons, piston rings and piston pins ground to size and lapped insuring fitting perfectly. All parts made to gauge and carefully inspected, insuring absolute interchangeability. Motor being located under seat, the side panels of which are removeable, all parts are easily accessible. Motor mounted in sub-frame which is mounted three-point suspension insuring best possible protection from road strains.

**Carburetor**— $1\frac{1}{4}$  inch Holley of the standard float feed type.

**Cooling System** — Thermo-syphon, water inlet passing into the bottom and return outlet placed over the exhaust valves insures perfect cooling without the use of pumps.

**Radiator**—Equipped with both top and bottom tank, the top tank having the screen so located as to spread the flow of the incoming hot water, thereby hastening its cooling and returning it from the bottom tank to the water

jacket at the proper temperature for, again, absorbing the surplus heat. The top and bottom tanks are connected by oval vertical tubes of copper which are supported by horizontal fins of the same material, these fins being, themselves, reinforced in front. A wooden dashboard extending above and beyond the radiator serves the purpose of adding rigidity and, being fitted with handles, facilitates entering or leaving the car.

Ignition—A low tension Kingston magneto rigidly attached to the engine generates the spark. Dry cells are used in starting until the magneto gets up to speed, at which time a conveniently located switch enables the operator to throw out the batteries and cut the magneto in.

Oiler—Motor fitted with sight feed oil pump. Sight feed attached directly to outlet of oil pump, enabling operator to see that the pump is working properly.

Steering Gear—Left driven, irreversible, "worm sector" type, operated by 16-inch wheel and having provision made for adjustment throughout.

Control—Spark and throttle levers located on top of steering gear.

Drive—From motor through double universal joint to transmission and jack shaft assembly, thereby overcoming bad effect of uneven road or motor. Final drive through jack shaft to side chain (one right and one left) with rollers  $\frac{5}{8}$  inch in diameter,  $\frac{5}{8}$  inch long and 1 inch pitch.

Transmission—Selective type. Three speeds forward and one reverse. Clutch multiple disc (hardened steel plates) running in oil and controlled by foot lever. Clutch is attached to front of transmission case, the entire unit being mounted three-point suspension, the entire unit is assembled at factory by the aid of jigs and templates, insuring perfect alignment of all parts. Stuffing box between clutch case and transmission case enabling the use of grease in transmission and light oil in clutch insuring the best possible lubrication of these parts.

Brake—Service brake double, external contracting on jack shaft operated by foot

lever. Emergency, double, external contracting operated by hand lever.

Frame—4-inch steel channel,  $5\frac{1}{2}$  lbs. per foot with cross ties of same material. All hot riveted together by air.

Springs—Semi-elliptic. Front, 40 inches long,  $2\frac{1}{4}$  inches wide, with 8 leaves. Rear 42 inches long,  $2\frac{1}{4}$  inches wide with 10 leaves. Rear springs assisted by auxiliary springs, 28 inches long, 2 inches wide and having 5 leaves, parallel to and working on rear axle.

Wheels—Second growth hickory, 14 of  $1\frac{1}{4}$  inch full round barrel spokes, all four wheels, 36 inches diameter,

Axles—Front axle is  $1\frac{1}{2} \times 2$  inches, with  $1\frac{11}{16}$  inch spindle, drop forged. Rear axle is  $2 \times 2$  inches with  $1\frac{15}{16}$  inch spindle drop forged.

Tires—Front 3-inch solid rubber, demountable rim; rear,  $3\frac{1}{2}$  inch solid rubber, demountable rim.

Bodies—Seat and foot board frames solid with chassis. Style of body optional. Open flare board. Load space,  $44 \times 114$  inches. height 13 inches. Platform and stake. Load space,  $44 \times 114$  inches, 30 inches high. Open flare board with canvas top. Load space,  $44 \times 114$  inches, height 57 inches.

Capacity 2,000 lbs.

Color—Chassis ivory white, with any style body. Bodies, Yale blue; can paint to suit at extra price. Bodies painted special or lettered to suit purchaser; prices upon application.

Wheel Base—110 inch, distributing the weight as per regular express wagon practice.

Tread—Standard, 50 inches.

Speed—4 to 20 miles per hour optional, depending upon labor imposed and conditions asked by the purchaser.

Weight—Approximately 3,500 to 3,800 lbs., varying as to style of body and equipment.

Extras—All regular stock accessories furnished on special orders, prices upon application.

Equipment—Two oil lamps, tail lamp, tools and electric horn, and full set of mudguards furnished as chassis equipment.



Hospitable Carter (after borrowing a match from stranger to whom he has offered a lift)—“Y’see, I b’aint allowed t’ave no matches when I be cartin’ blarstin’ powder fur them old quarries up along.”—*London Punch*.

“What animal,” said the teacher of the class in natural history, “makes the nearest approach to man?”

“The flea,” timidly ventured the little boy with the curly hair.

It is the custom at a certain public school down in Maine for the teachers to write on the blackboard any instruction they desire the janitor to receive.

The other morning the janitor saw written:

“Find the greatest common divisor.”

“Hullo!” he exclaimed. “Is that durned thing lost again!”

Henry Watterson, the Louisville journalist, told this story at a recent dinner party:

“One day when I was the city editor of a small newspaper, a fine turkey was left at the office. We all hankered after the bird, but the editor finally claimed it; took it home and had it cooked for dinner. The next day a letter was handed in to him which he opened and read:

“‘Mr. Editor, I sent you a turkey yesterday which had been the cause of much dispute among us. To settle a bet, will you please state in tomorrow’s issue what the turkey died of?’”—*Pathfinder*.

#### Allan Knew.

The teacher in a country school always tried to make the lessons as interesting as possible.

“Now, children, she said, “let me see what you remember about the animal kingdom and the domestic animals that belong to it. You have named all the domestic animals but one. Who can tell what that one is?”

There was no reply.

“What!” exclaimed Teacher. “Does no one know? It has bristly hair, likes the dirt, and is fond of getting into the mud.”

A small boy at the end of the class raised a timid hand.

“Well, Allan?” said Teacher.

“Please, ma’am,” said the little boy reflectively, “it’s me.”—*September Lip-pincott’s*.

Political Candidate—“Well, did you discover anything in Stump’s past life that we can use against him?”

Detective—“Not a thing. All he ever did before he came here was to sell awnings.”

Political Boss—“Why, that’s just what we want. We’ll say that he has been mixed up in some decidedly shady transactions.”



Some home runs are made on sewing machines.

And cowardice makes liars of us all—or nearly all.

Woman's vanity is largely due to man's flattery.

People who talk the most disseminate the least wisdom.

Wisdom comes with years—if folly leaves room for it.

A well-bred child never reproves its parents in public.

Just because a man doesn't drink is no sign he isn't thirsty.

Occasionally we meet people who are almost as smart as we are.

There are fools and hopeless fools; the latter tell all they know.

The greater the cost of living, the cheaper it is to remain single.

When two dentists form a partnership they should pull together.

The most exclusive people in the world are in solitary confinement.

The best you can say of the average man is: "He tried to do his duty."

Love will push a man into matrimony, but it takes a lawyer to pull him out.

When a young man tells a girl that he is unworthy of her she should believe him.

Scarcely any man's veracity is unimpeachable after he acquires the fishing habit.

Occasionally a man is so lucky that he gets just what he wants without even wanting it.

Don't waste time explaining your actions; people prefer to draw their own conclusions.

During the courtship she reads poetry to him, but after marriage she reads him the riot act.

Once in a great while you meet a woman who thinks her husband really appreciates her.

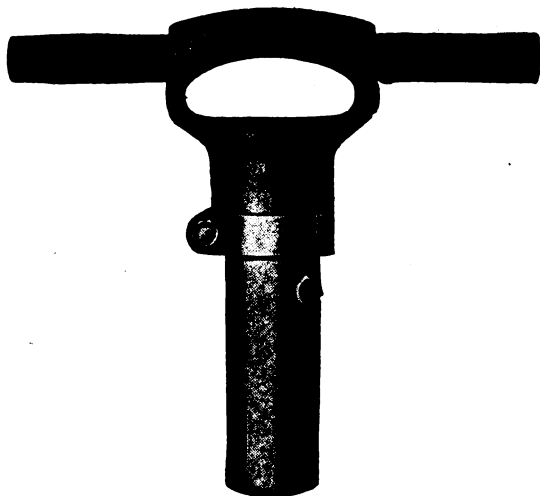
There's always room at the top—which reminds us that ball gowns should be revised upward.

Some married men would be only too glad to settle down if their wives would quit stirring them up.

It's up to the promoter of a get-rich-quick scheme to keep a get-away-quick plan on file for use in case of emergency.

About the only time a woman ever pays any serious attention to her husband is between their wedding day and the arrival of the first baby.

## Chicago Valveless Hand Drill



**Chicago Valveless Hand Drill fitted with extension handles which may be removed if desired.**

Simple in construction, consisting of practically only three pieces — cylinder, piston and handle, which insures extremely low cost of maintenance.

Hits hard and fast. Its three-pound piston strikes 2,000 blows per minute on the head of the drill steel, resulting in drilling speeds of from 5 to 6 inches per minute. While 6 ft. holes are considered economical limit, it has been known to drill holes 10 to 12 feet in depth.

Bulletin 148 tells all about. Send for it today.

## Chicago Pneumatic Tool Co.

**Chicago**  
**1010 Fisher Bldg.**

**Branches**  
**Everywhere**

**New York**  
**50 Church St.**

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# IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances  
By THE IDEAL POWER PUBLISHING COMPANY  
Fisher Building Chicago

Vol. 10.

DECEMBER, 1913.

No. 9.

## Cleaning Buildings with Sand Blast

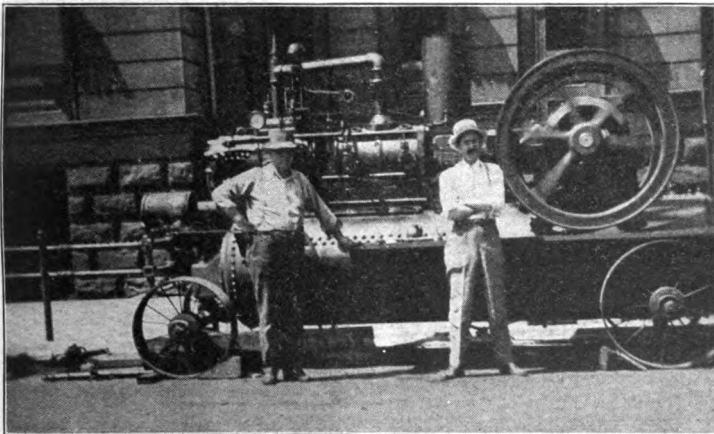
The Daily & Cunningham Sand Blast Co., of Louisville, Ky., have recently finished contract for sand blast cleaning of the Louisville City Hall and Annex building.

The compressor used was the Chicago Pneumatic Tool Co.'s latest type of Portable Gasoline Driven Compressor, 150 foot capacity, furnished the Daily & Cunningham Sand Blast Co. by the Chandler-Burgy Co. of Louisville, representatives for the Chicago Pneumatic

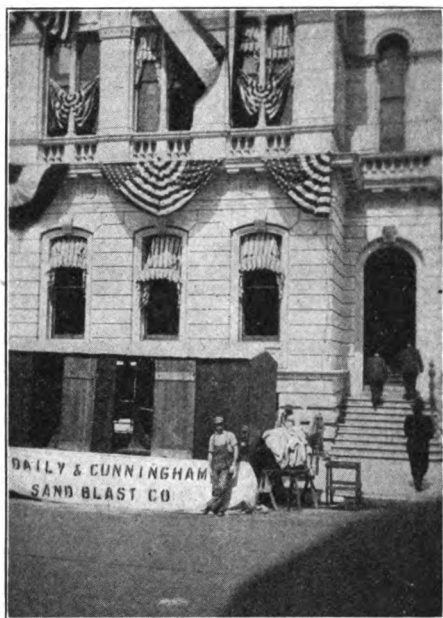
Tool Co., in Kentucky and Southern Indiana.

There has never been a sand blast contract executed in this city like the one handled by the Daily & Cunningham Sand Blast Co. Being under time limit they worked during slight rains without the least interruption.

In starting this work the compressor was located at the rear end of the building, piping air lines to the third floor, where the sand blasts were located. The



This shows first location of compressor which enabled them to clean the rear and one side of City Hall without moving the compressor. Mr. Daily, president of the company, on left-hand side.



Compressor enclosed in wooden house to avoid dust getting on the machine.

men worked on scaffold ladders enclosed in the canvas which served as a sand catcher.

A tube made of canvas was stretched from the bottom of the canvas box enabling sand caught therein to pass to the ground which could be used over. It was only necessary to move the air compressor once in cleaning the two buildings, thereby saving much time in not being forced to change pipe line.

From the adjoining photographs an idea can be gotten regarding work being done. One photograph shows the building decorated for the Perry Centennial Celebration, for which reason a time contract for cleaning the building was made, allowing the Daily & Cunningham Sand Blast Co. practically twenty working days to complete the work.

Two "Buckeye" sand blasts, made by the Macleod Co., of Cincinnati, were used, the Chicago Pneumatic Gasoline Compressor furnishing air for both machines and never out of operation after work was started.

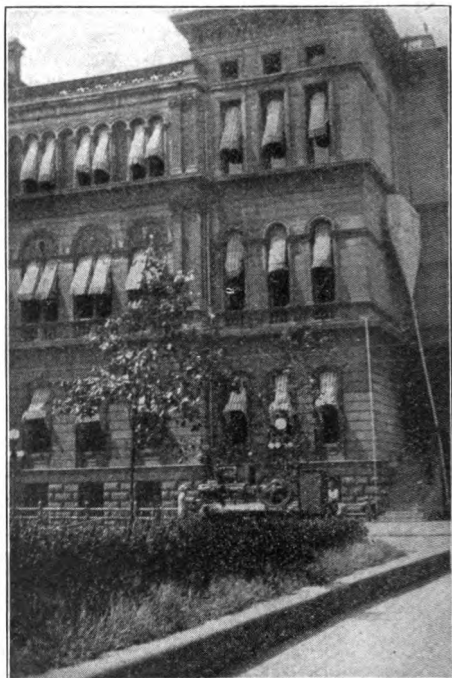
Mr. T. J. Daily of the above company, being practical in every way, saw the

necessity of having reliable machinery for carrying out this time contract which caused him to decide on the Chicago Pneumatic Portable outfit and which answered his requirements in every way.

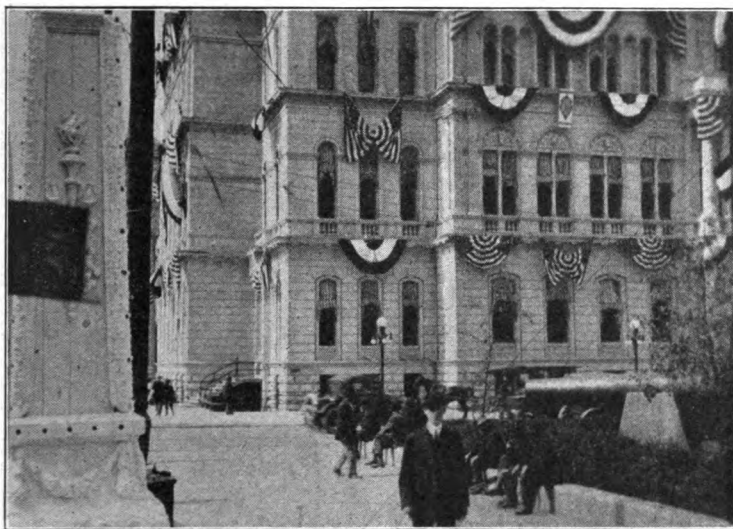
Messrs. Daily and Cunningham are more than pleased with the workings of their compressor as, unlike other Portable Compressors, little attention was required of the Chicago Gasoline Machine, the engineer in charge devoting practically all his time to looking after the sand supply, filling sand tanks, placing temporary curtains or shields to protect windows from sand and dust, thus not interrupting employes in the building.

Many favorable comments were made by not only the city officials, but others, all of whom seemed astonished at the remarkable improvement made in the appearance of the building after Sand Blast cleaning.

In addition to cleaning the City Hall



Part of City Hall before cleaning. The white box on side is a scaffold ladder enclosed in canvas on which men worked.



Above shows building after cleaning and partly decorated for Perry Centennial Celebration.●

and Annex the Daily & Cunningham Sand Blast Co. have just finished cleaning the front of the Avenue Theater Building, Fourth Avenue, which work was done at night on account of the large traffic in Fourth Avenue (which being in the fashionable shopping district) thus avoiding the large crowd of curious looker-ons.

While executing both jobs and since completing same the Daily & Cunningham Sand Blast Co. have received several requests to submit figures on cleaning other stone and brick buildings and they are anticipating a large business in this line.

#### A Compressor Kick.

We have in use an old compressor which had punched a hole through the air cylinder head about 4 in. in diameter, and this had been closed by bolting a plate over it. One day a slight leakage appeared around this plate and I said to the youngster, "John, put a new gasket under that plate when we shut down." Accordingly, at the noon hour, John took a wrench, removed the cap screws that hold the plate, and, standing directly behind the plate, started with a chisel to pry the thing loose.

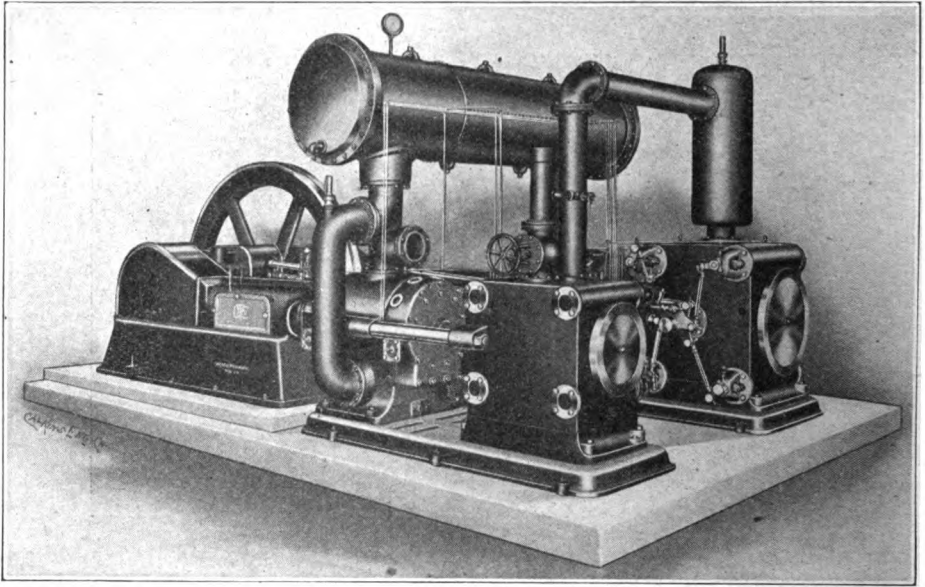
Right there things happened rapidly. When John found himself he had displaced a large pane of glass in the window just behind him and was wedged in so tight that it took both of us to get him out. When he came to himself, his first remark was, "Who'd a thought that that little plate could kick so hard" The trouble was a leaky discharge valve, which let pressure back up from the receiver tank into the compressor cylinder, and I noticed that whenever anybody afterwards had any repairing to do on the compressor, he let the pressure off the receiver before starting the job.—Practical Engineer.

#### A Non-Resident.

An English tourist was sightseeing in Ireland and the guide had pointed out the Devil's Gap, the Devil's Peak and the Devil's Leap to him.

"Pat," he said (all English tourists call Irish peasants "Pat," just as they call little boys "Tommy"), "the devil seems to have a great deal of property in this district!"

"He has, sir," replied the guide, "but, sure, he's like all the landlords—he lives in England!"



Class M-CSC "Chicago Pneumatic" Compressor.

**D., L. & W. Ry. Installs "Chicago Pneumatic" Compressor.**

The demand for the conservation of natural resources is daily becoming more universal and imperative, but the practical application of the principle is nowhere better exhibited than at the Kiser Valley shops of the D., L. & W. R. R. at Scranton, Pa., in a district where the supply of coal was formerly considered inexhaustible and its cost insignificant.

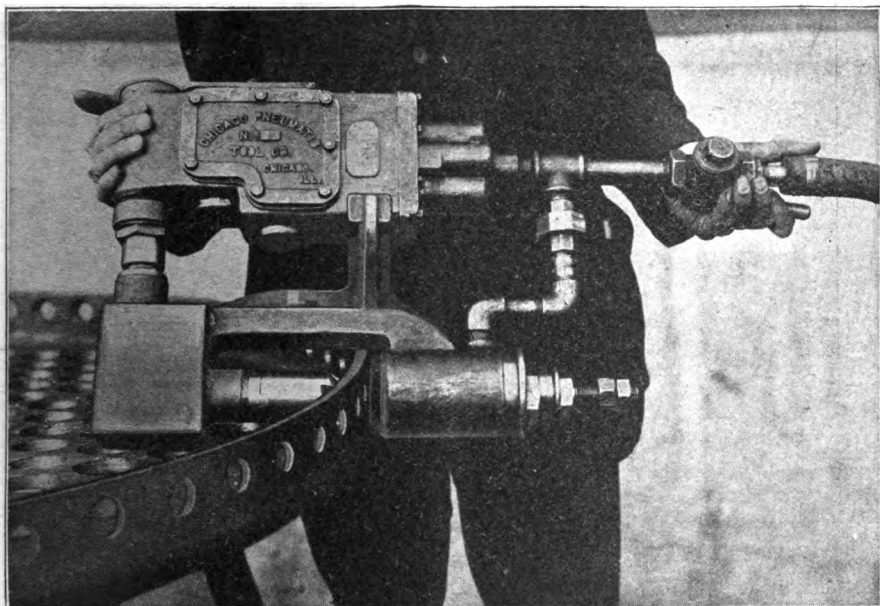
That conditions have changed is aptly illustrated by the recent installation by the railroad company of a 2,500-ft. "Chicago Pneumatic" Class M-CSC two-stage compressor, equipped with Corliss cross compound steam cylinders and designed for the highest steam economy and resulting minimum fuel consumption.

The illustration shows the compressor on the testing floor of the Franklin, Pa., shops of the Chicago Pneumatic Tool Co., it being the practice of the company to completely assemble and thoroughly test all machines previous to shipment.

This unit has steam cylinders 19 in. and 31 in. in diameter, respectively, for

the H.P. and L.P., the L.P. air cylinder being 28 in. and the H.P. 17 in. in diameter, with a common stroke of 26 in., the free air displacement being 2,500 cu. ft. per minute at 135 R.P.M., which is the maximum speed for which the air and steam valves and ports are designed. Steam and exhaust valves are of the Corliss type, operated by a simple system of links connected to wrist plates, which in turn are driven from eccentrics on the crank shaft, the entire valve gearing of the machine being simplified as far as possible or practicable and operating quietly at the highest speeds.

Variable delivery of air to meet the demands is at all times provided for by the application of a sensitive speed governor and air pressure regulator operating on the steam valve gear to momentarily change the point of cut off by a sufficient amount to allow the compressor to assume a speed to correspond to the air load. As this load is constant per stroke the M.E.P. and consequently the point of cut off of the steam end is practically constant regardless of the speed, giving an opportunity for the employment of compound



Chicago Countersinking Machine used in connection with Little Giant Drill for countersinking flanged flue sheets. Flanged flue sheets may be countersunk at rate of two bolts per minute, as compared with old rate of one bolt every two minutes.

cylinders exactly proportioned for the steam conditions, and permitting of economies far exceeding those of constant speed power engines.

A minimum power consumption is obtained by a carefully designed air end which, as shown in the illustration, includes a very large intercooler, through the employment of which air is delivered to the H.P. cylinder at very nearly the temperature of the atmosphere, this being the ideal condition in the economical compression of air.

Friction losses in this type of compressor are reduced to a minimum, due to the employment of large pins and bearings throughout, the maintenance of perfect alignment through the use of continuous sole plates beneath the cylinders, the exclusion of dust and dirt by the enclosed construction, and particularly to the unexcelled system of positive lubrication at all speeds.

Some men are born deaf and some acquire deafness shortly after acquiring talkative wives.

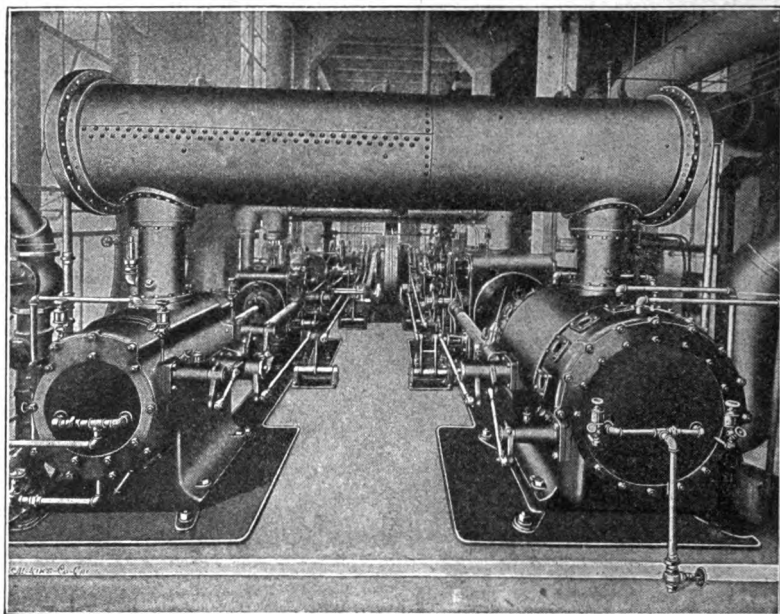
#### Chicago Countersinking Machine.

This is a combined drilling and countersinking device and is designed to operate in connection with the Little Giant Drill. It is used for drilling and countersinking flanges, such as flue sheets, door sheets, channel iron, "I" beams, etc., doing away with all rigging, back stop and feed screws.

It is fitted with a No. 4 Morse Taper Spindle and is kept from turning by means of lugs which fit around the housing. Ball bearings are used throughout and bevel gears are enclosed in an oil tight chamber. The feed is automatic, being regulated by means of an air chamber or push-up device, which forces the drill against the work with constant pressure.

Weight of machine complete is 35 pounds. Shortest distance from drill to side of flange  $1\frac{1}{2}$  inches. Machine is equipped with drill  $1\frac{1}{16}$  inch diameter.

Price and additional information supplied on request.



2,000' "Chicago Pneumatic" Horizontal Cross Compound Corliss Two Stage Compressor, size 17"x30"x28"x17"x30", installed in the new Grand Central Terminal Power House, New York.

#### **"Chicago Pneumatic" Corliss Steam Driven Compressors.**

Large volumes of compressed air, such as are now required by industrial plants, water works, mining, contracting and railway companies, may be produced by a number of smaller compressor units, or by one or more large machines. Local and individual conditions or personal preferences govern the selection of type and size in each case.

In general, however, ultimate sustained economy is the standard by which operating performance is gauged. In a steam-driven compressor of capacity exceeding 1,200 cubic feet per minute, highest steam economy, which is the equivalent of lowest power cost, is only obtainable by the employment of the efficient Corliss Steam Engine as the driving element.

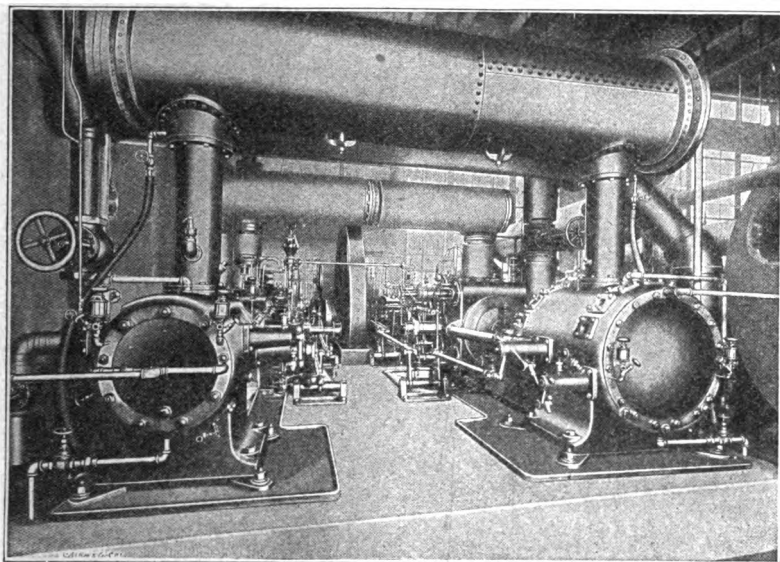
Extravagant claims have been advanced on behalf of engines employing novelties, or semi-Corliss valve types, or turbo blowers running at enormously high speeds, but for shop pressures and sustained reliable service the Corliss

Compressor remains supreme.

In Bulletin 34-D, just issued by the Chicago Pneumatic Tool Co., are presented the principal features of "Chicago Pneumatic" Corliss Steam-Driven Compressors of standard design, and for capacities from 1,000 to 6,000 cubic feet per minute, designed for all usual air or steam pressures, condensing or non-condensing.

To afford the prospective user the fullest opportunity to investigate in detail every part entering into the design and construction of "Chicago Pneumatic" Compressors, these details are fully described in the bulletin; but there are also presented certain essentials requiring first consideration; for instance, no matter how high the grade of material selected, if employed to construct a poorly designed and inefficient machine no advantage accrues through their use. On the other hand the finest kind of workmanship, if expended upon a poor grade of material, becomes of no value.

In general, "Chicago Pneumatic" Cor-



1,000' "Chicago Pneumatic" Horizontal Cross Compound Corliss Two Stage Compressor, size 14"x24"x23"x13"x24", installed in the new Grand Central Terminal Power House, New York.

liss Compressors accurately reflect the present state of the art in their simplicity and perfection, and represent the broadest experience. Every possible superfluous feature has been eliminated, reducing the machine to the fewest parts capable of producing the desired results; hence Simplicity.

The extensive experience of the manufacturers covers the period of real development in the art of air compression, during which time they have studied, investigated or tested out every device, feature or design regarded as an improvement. The present designs embrace only such features as experience has demonstrated to be real and permanent improvements. These form the basis of their claim for Correctness of Design.

There is today such an extensive range of materials from which to choose, obtainable at such widely differing prices that a considerable discrepancy in "first cost" can result if "quality" is not the first consideration. Steel is steel technically, and a poor grade or good grade when polished look alike, although vastly

different in terms of wearing ability or strength. All material entering into the construction of "Chicago Pneumatic" Corliss Compressors is selected according to standards relating directly to the part and the service for which intended.

Bulletin 34-D will be supplied on request.

#### Hardening Steel by Compressed Air.

A process by which steel is hardened by means of compressed air is now in use by a German firm in cases where only certain parts of the metal require hardening, according to Compressed Air. The customary methods of hardening by chilling the steel in water, oil, or special baths is not satisfactory in such cases, owing to the tension created between the hardened and unhardened portions of the treated metal. In the new procedure the compressed air is sprayed over the metal through specially designed nozzles, by means of which, by varying the number and spacing the openings, the degree of hardening may be accurately graded.



### The Chicago Portable Mine Hoist.

The Chicago Portable Mine Hoist solves the question of how to raise and lower timber and rock economically and quickly in raises, winzes and stopes, and is indispensable in an efficiently managed mine because of the ease with which it can be set up or torn down and transported from point to point, the great tonnage it will handle, doing it in a tenth of

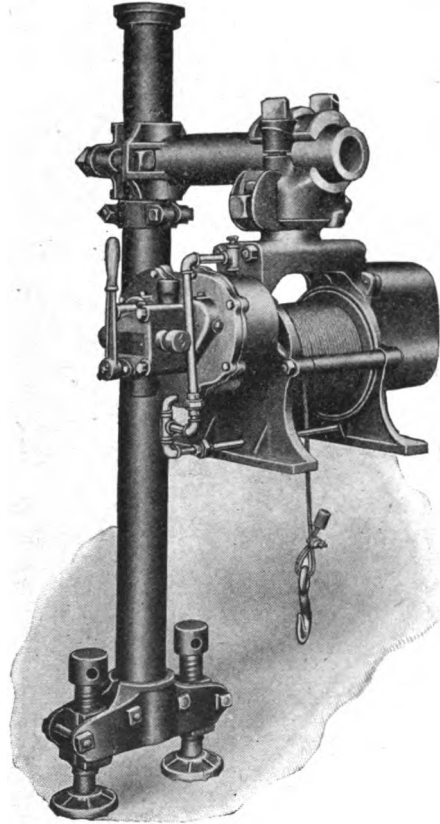
hoist can be set up as high or as low down on the column as desired, and swung in any direction, either close to the column or some feet out from it.

It is built just right for underground conditions. It is a compact and sturdy machine built light enough to make it easy to handle and yet strong and powerful enough to do a great deal more work than it will ordinarily be used for in every day service. It will save its first cost many times over in a very short time.

It can also be bolted to a timber and used as a stationary hoist. In many places it might be desirable to do this instead of clamping the hoist to a drill column.

The weight of the Chicago Portable Mine Hoist is only 300 pounds, about what a large rock drill weighs, and is just as easily handled as a drill.

Bulletin 149, issued by the Chicago Pneumatic Tool Co., tells all about this new mine hoist, and will be supplied on request.



the time required by hand labor, and the consequent large saving in labor cost effected by its use.

As will be seen from the illustrations the Chicago Portable Mine Hoist is equipped with an inverted cone similar to that found on rock drill shells, which permits mounting it on a 4½" double screw column in exactly the same manner as a rock drill. By means of the column arm to which it is clamped the

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### The Reason.

"Why don't you brush your hair?" asked a man of the boy with the frowsty hair.

"Ain't got no brush."

"Why don't you use your father's brush?"

"He ain't got no brush."

"No brush? Why hasn't he a brush?"

"Ain't got no hair."

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### The Nut Cracker.

Mrs. Cook had a new servant, and after the first cake she baked, the mistress went to the kitchen.

"Delia," said Mrs. Cook, "your cake was very good, but there was not enough nuts in it. When you make another, please remember I like plenty of nuts in the cake."

"Well, mum," replied the girl, "the reason I didn't put more in was because I couldn't crack any more today. Indeed, mum, an' my jaw hurts yet from them I did crack."—Lippincotts.

### The "New Boyer Speed Recorder" With Clock Attachment.

The Boyer Speed Recorder passed through its experimental stages some twenty years ago and has fully upheld the confidence of its designers, men of unsurpassed ability, that it would be absolutely accurate and as reliable as a railroad man's watch. It has proven a substantial machine possessing all the qualities of a fine recording instrument without the usual delicacy.

Without in any way altering the machine, which has established itself through twenty years of irreproachable service, a clock attachment possessing stability strictly in keeping with the machine to which it is attached, has been added. It is so arranged as to record, graphically, the time at all points during the trip. This, we are positive, is the finishing touch to a machine that is the last word in speed recording.

The charts from the recorder are important records for the motive power, the operating and the engineering departments.

The heavy power in present use makes a speed limit necessary in order to keep maintenance and fuel cost within reason. It is common practice for a crew approaching a pull, to speed up; yet, as they are slowed down on the hill, the average time, which is the only check possible without a recorder, may be less than the limit.

One of the frequent complaints the engineering department makes to the motive department is faulty counterbalancing. There is one and only one speed at which a locomotive can be perfectly counterbalanced, and the wear and tear caused by an engine, balanced for 35 miles per hour, being run at 60 miles per hour, is tremendous.

An experienced engineer can tell approximately, by a sort of instinct how fast he is running at any particular time, but he has a great many things to think about, and it is practically impossible for him to remember the varying speeds at which he is required to pass the different points on the line.

Often it is vitally important that the accurate speed at a certain point be known. Often the engineer will give this information, as he remembers it, and be very positive, in his assertion. He is not maliciously lying, but is simply mistaken.

The engineering department is compelled from time to time to have slow orders placed on different pieces of track undergoing or in need of repairs. Heavy curves and yards are often placed under permanent slow orders. These slow orders result in a perpetual controversy between the engineering, the operating and the motive power departments, with practically always the same stack of correspondence, the sum and substance of which is "I did" and "You did not." These debates can always be definitely settled by referring to the "Speed Recorder."

Performance on grades and curves is always valuable information to the chief engineer. Inasmuch as acceleration, negative and positive, can be readily figured from the chart, it proves a reliable instrument for getting train resistance. Through the acceleration, it is a simple matter to ascertain if the power is overloaded, which would be of assistance in tonnage adjustment.

There is at times more or less difficulty in locating the responsibility for train delays. An engine is often given the blame for not getting over the road when held out repeatedly by the dispatcher, on extra and prolonged stops. These stops are shown plainly, both their location and their length, by the recorder.

As stated above, the new Boyer Speed Recorder with clock attachment is the last word in speed recording.

Prices and full information may be obtained from the Chicago Pneumatic Tool Co.

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Old Father Hubbard  
Went to the cupboard

To quench his awful thirst;  
When he got there  
The cupboard was bare—

His wife had been there first!

# IDEAL POWER

PUBLISHED MONTHLY  
In the Interest of Compressed Air  
and Electrical Appliances

BY THE

**IDEAL POWER PUBLISHING CO.**  
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C. I. HENRIKSON Editor

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## TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 50 cents per year

## ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our  
subscription list.

To the Reader:

The "survival of the fittest" is a cold unfeeling doctrine, but its application is universal. It applies at the present time to the sentiments that sway us as we prepare this number for the press. It leaves us with but one thought, with but one wish, which, though ages old, can be expressed in no better way than "A Merry Christmas and a Happy New Year," and on behalf of the Chicago Pneumatic Tool Company, its officers, and its employes, we extend to all of you this greeting of the season.

## The Secret of Success.

By Thomas Dreier.

The secret of success is not a secret. Nor is it something new. Nor is it something hard to secure. To become more successful, become more efficient. Do the little things better. So work that you will require less supervision. The least supervision is needed by the person who makes the fewest mistakes. Do what you can do and what you should do for the institution for which you are working, and do it in the right way, and the size of your income will take care of itself. Let your aim ever be to better the work you are doing. But remember always that you cannot better the work

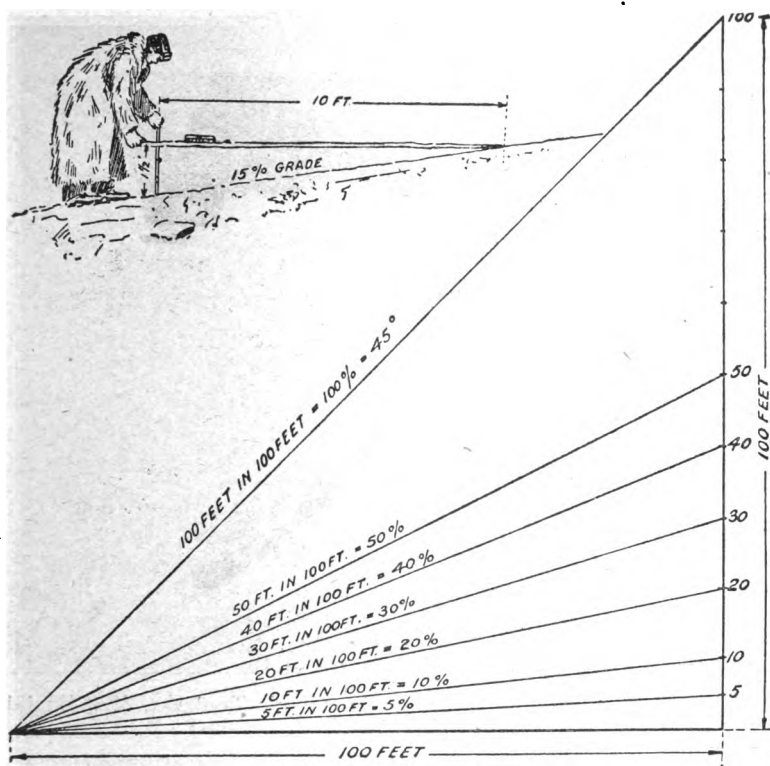
you are doing without bettering yourself. The thoughts that you think, the words that you speak, and the deeds you perform are making you either better or worse. Realize with Henley that you are the master of your fate and the captain of your soul. You can be what you will to be. Forget yourself in rendering service to others. If an employe strive to make yourself of greater value to your employer. Look upon yourself as a manufacturer. Think of yourself as being in business for yourself. Regard yourself as a maker and seller of service, and ever bend your thought and your energies toward the improvement of your product. The wise manufacturer never injures his machinery willfully. Your body, your mind, your soul serve as your plant. Eat and drink only that which will nourish your body, entertain only those thoughts that will enrich your mind, and if you feed your body with the best physical food and your mind with the best mental food you will build up a Service Factory that will find its products in constant demand. The world is hungry for Quality Service. It wants to pay for it. It is paying for all it can get. The market is not crowded. There is a chance for you right now. There is a chance for you right where you are. The time to start is Now. Your reward will take care of itself.

## Economical.

In a certain town of Nebraska lives a man who has been so unfortunate as to lose three wives, who were buried side by side. For a long time the economical Nebraskan deliberated as to whether he should erect a separate headstone for each, commemorating her virtues, but the expense deterred him. Finally a happy solution of the difficulty presented itself.

He had the Christian name of each engraved on a small stone—"Mary," "Elizabeth," "Matilda"—a hand cut on each stone pointing to a large stone in the center of the lot, and under each hand the words:

"For epitaph see large stone."



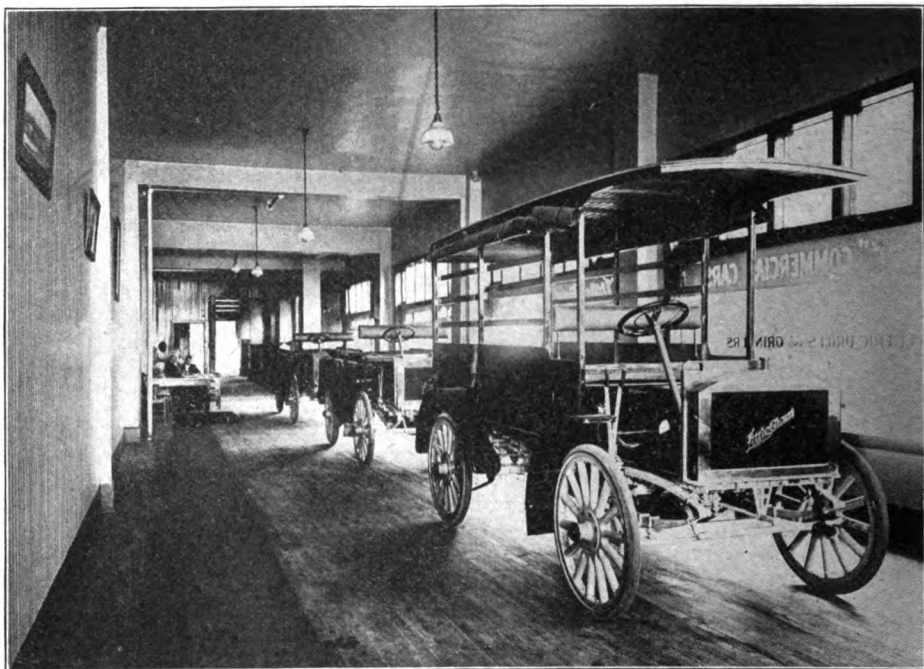
### Measurements of Grades in Per Cent.

The inclination of a road surface is usually spoken of as a grade of 5, 10, 15%, etc. As in any other case, per cent simply means so many in a hundred, or in other words the number of feet vertical rise or fall in 100 feet measured in a horizontal direction, determines the per cent of the grade as shown in the accompanying drawing. A rise of 5 feet in 100, the base of the triangles being 100 feet is 5%, a rise of 10 feet, 10%, etc. It will be noticed that although there is a definite relation between angles and the per cent of grade, these are two very separate and distinct quantities. A 20% grade being only an angle of about 11 degrees, these equivalent angles being given in the table on the following page. Thus a rise of 100 feet in 100 or a 100% grade is only an angle of 45 degrees, and not an angle of 90 degrees or perpendicular as it is sometimes considered.

### How to Ascertain the Grade Without a Gradometer.

A method of determining the percentage of a grade on any road without any special instruments is here given and illustrated. All that is required is to measure off ten feet on any convenient stick and rest one end as shown in the sketch above, upon the surface of the road, being careful to keep the stick horizontal. This can be done by using a spirit level or an ordinary bottle filled with water allowing a bubble in the well-known manner. Measure from the end of the stick to the road surface and multiply by 10 which will give the per cent of the grade. The average of several such measurements will give fairly accurate results. (Chilton Automobile Directory.)

A coquette is a girl who syndicates her affections.



Little Giant Salesrooms of the Chicago Pneumatic Tool Co., 2122 Euclid Ave., Cleveland, Ohio.

### Motor Truck Means Cheaper Land.

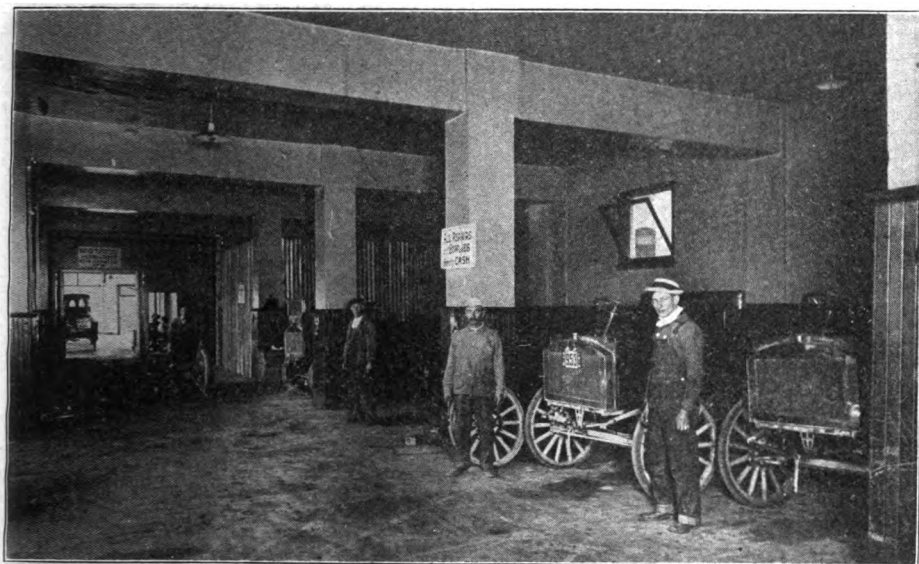
There is an argument for motor trucks which shrewd farmers are coming to appreciate, and it is this: Where one grows vegetables or small fruits near any city or town it is necessary to have land which is close in, if the produce is to be hauled in wagons drawn by horses. This is because there must be the minimum time elapse between the gathering of the crops and shipment or delivery to customers. Everything depends on the physical condition and the freshness of berries and vegetables. The result is that if horses are to be used the gardeners and fruit growers pay high prices for land adjacent to the city. This land has become so very high in price that it is almost impossible to make a profit on the investment.

The men who are in this business have found if they go out ten or twelve miles and use a truck, they are really just as close to market as if they were adjoining the city limits and hauling their produce in the old way. The result is that they are now ready to go eight

or ten miles out in the country, get land at about one-third the price they would pay near the city, and the saving in their investment will more than pay the cost of the truck.

Here is a concrete example. A man who tries to buy land adjoining the city of St. Joseph, where he can get in and out of market in the old fashioned way, will have to pay \$500 an acre for his land, and we will suppose that he will need ten acres, making an investment of \$5,000 in land. Now, this man can go out eight miles on a macadamized road and get land for \$150 an acre. The soil will be just as good as that near town. On a ten-acre tract, the saving in the price of land alone will be \$3,500. You see, therefore, instead of spending all of his money for land he will save on the investment and be able to buy a truck, and really he will be just as close to market as if he were several miles nearer town and depended on the old-fashioned way of marketing.

The number of Little Giant trucks that are being sold for this service is proof that the idea is a practical one.



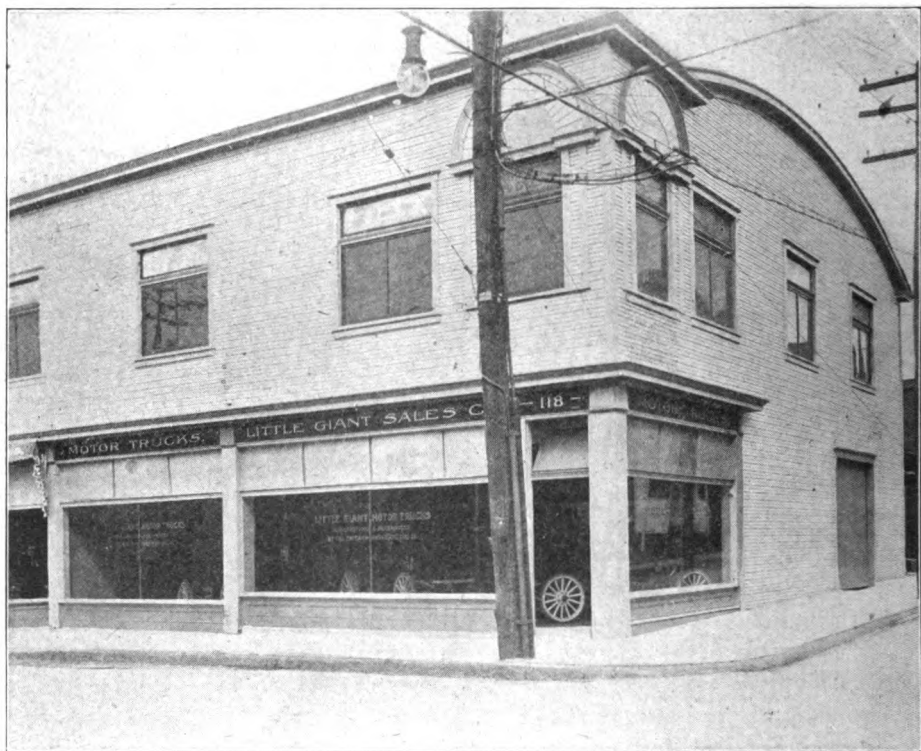
Little Giant Service Station, Operated by the Chicago Pneumatic Tool Co., at 2122 Euclid Ave., Cleveland, Ohio.

#### How Merchants in a Small Town Installed a Motor Truck on a co-operative Basis.

"Beginning from the day that I first heard of one in use, I have been a motor Truck enthusiast," said a dealer. "I wanted to use one in my business, but, living in town of about 10,000, I could not see my way clear to do so. I transformed a number of sticks of good pine into whittlings before I solved the problem, but I did solve it. I made a combination with four other dealers in other lines of trade, and we bought a two-ton truck. Each man contributed capital in proportion to his trucking expense for the year just past. Each draws six per cent interest on his investment. We have a good, reliable man as driver. His office is at my store. My clerk attends to 'phone calls from the other members, and I get a reasonable compensation for this service. Early in the forenoon, the driver receives reports from all of us covering work for the day as far as then known. He makes his plans and starts in. He has two signs for each firm, and displays

them according to the one he is working for at the time. We pay him good wages, and a higher rate for overtime. He does his best to accommodate us all, and makes out very well. When the demand is heavy he throws some of the delivery work into the evening. When work is slack he picks up all the outside jobs he can. We allow him 10 per cent of the receipts upon such work, and the balance goes to reduce expenses. The total expenses for the month are apportioned according to the work done for each member of the association. We find that it works satisfactorily for all, and that the trucking expense has been reduced from about 20 per cent in one case to as much as 35 at the other extreme.

"I have always thought of Christmas-time, when it has come round, as a good time; a kind, forgiving, charitable, pleasant time. And though it has never put a scrap of gold or silver in my pocket, I believe that it has done me good, and will do me good; and I say, God bless it!"—Dickens's "Christmas Carol."



Home of the Little Giant in Pittsburgh. The Little Giant Sales Co., Kirkwood St. and Sheridan Ave.

#### Some Little Giant Truck Data.

For the man who thinks in figures, the following data on a recent test of a Little Giant Truck, made by J. H. Watson, Worcester, Mass., will prove interesting:

Mileage—52 miles.

Time—7 hours and 50 minutes.

Stops—31 (average length of stops, 3 to 5 minutes).

Gasoline Used—4½ gallons (average 11/55 miles per gallon.

Oil Used—1½ pints.

Maximum Load—2,610 lbs.

Minimum Load—1,290 lbs.

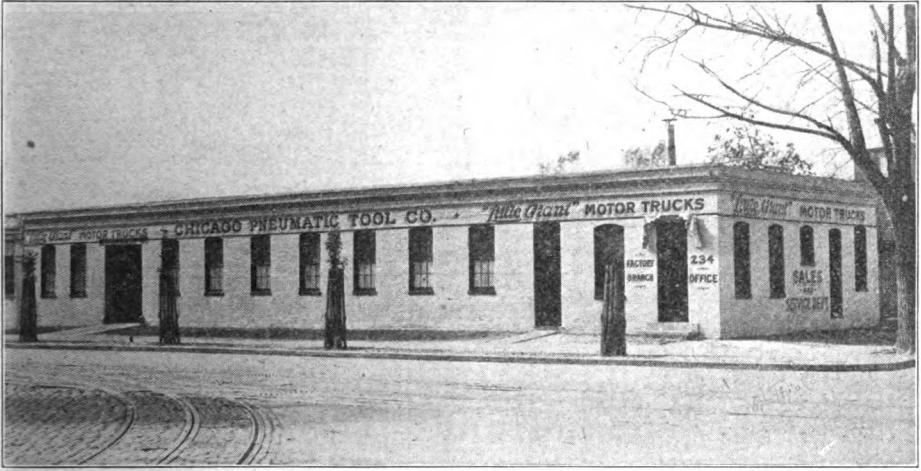
(Most of the time the load was about 2,100 lbs.)

Road Conditions—7 miles very soft, country roads and hills; 6½ miles city pavement; 38½ miles good macadamized roads but very hilly.

#### Non-Stop Run in Los Angeles.

In Los Angeles, California, a few weeks ago, the dealers held an Automobile Show, both pleasure cars and trucks, and in connection therewith held a 24-hour non-stop truck run in which the "Little Giant" was entered.

The run consisted of a 24-hour continuous non-stop road run over a route laid out in the vicinity of Los Angeles, the trucks being loaded to their full rated capacity and the Little Giant finished with a perfect score at the conclusion of the test. Little Giant did not withdraw but continued and finished at the end of 50 hours' continuous service, having covered 501 miles and could have continued, as everything about the car was in perfect condition.



Home of the Little Giant in Washington, D. C., located at 234 14th St., N. W.

#### Advantages of the One-Ton Truck on Short Hauls.

A prominent implement company of Seattle, Wash., recently decided to adopt motor delivery, but was not sure whether light or heavy trucks would best answer the purpose. After exhaustive tests, the one-ton truck was adopted as the most flexible and best adapted to the varying conditions of delivery. They say:

"We use three one-ton trucks. One replaces a two-horse truck, with driver and helper; another a one-horse pick-up wagon, with driver, and another replaces one wagon, with driver, which was supplemented by hiring teams. When these trucks were first put into service we supplemented them with still lighter motor vehicles for pick-up service, but found that after service became better organized we could dispense with these latter. We are not in position to furnish detailed figures as to saving, but can say that under all conditions which we have had to face we have found the motor truck more economical than the horse-drawn delivery.

"Our conditions in the West are somewhat difficult, owing to the scattered location of the railroad freight houses and docks. We have found that by using a

smaller truck we could make up complete loads for individual delivery to the different freight houses earlier in the day, when the lost time at such freight houses was much less than in the afternoon. We have also found that a light truck could be used for pick-up service, where the expense of operating a larger truck would be almost prohibitive."

The Chicago Pneumatic Tool Company arrived at the conclusion that the field for the one-ton truck was the greatest field, and adopted that size and capacity for their Little Giant.

Not long ago a country newspaper said, "The deceased lay quietly in his coffin." Now this is not my funeral as some of the boys would say but it is eminently proper that the action of the deceased be publicly commended. Nothing so confuses the mourners and disturbs the solemnity of the occasion as for the deceased to cut undignified antics or to cavort about the room, without regard for the sorrow of the mourning friends. It is also a reflection upon his gentility and injures his reputation in the community. It is quite proper at all times for the deceased to lie quietly in his coffin and the practice should be encouraged at all well regulated funerals.





A Little Giant that is making good in Detroit. Showing how the advertising and the transportation problems may be satisfactorily solved.

**He was Skeptical as to Motor Truck Economy, But Was Finally Convinced.**

"For a long time," said a dealer from one of the larger Western cities, "I was interested in the use of motor trucks, but skeptical as to their economy. I read everything that I saw in print upon the subject, and talked with salesmen and truck users. Finally, an agent of one company made some conservative figures as to the saving that I might reasonably expect to make, and sold me a truck upon definite guarantees all along the line. He claimed a saving of 20 per cent. I bought a truck, and in less than three months found that I was saving 25 per cent upon the former cost of trucking and delivery services. I was very much pleased, and have continued in that frame of mind ever since. Motor truck people claim that the number of machines in use is in-

creasing rapidly. Their designers have brought out bodies adapted to every conceivable kind of business. Certainly one sees a variety of them any day in the crowded streets of a city. Incidentally, it rejoices my heart to see the horses relieved from so much hard work. Think how horses used to strain and tug in the old horse-car days, and now there are very few such lines to be found in the whole country. The time is not far distant when all of the heavy trucking, if not trucking of all kinds, in large cities will be done with motor trucks. Salesmen were quick to point out the advertising value of motors, and they certainly have had value of that sort. Very soon the point of view will change. The firms that use them will not be noticed so much, but those that do not will be set down as old foggy and behind the times. The ultimate saving to the country by the change from horses to trucks will be enormous.



Another Little Giant that is making good on the streets of Detroit.

A Little Giant Model H was loaded with 2,500 pounds and driven from Chicago Heights to Chicago and return, a distance slightly in excess of 50 miles, using three different sizes of jackshaft sprockets, and developed the following valuable information:

- 15-tooth sprockets—
  - 6.5 miles per gallon gasoline.
  - 25 miles per hour speed.
  - 9 per cent grade on high gear.
- 18-tooth sprockets—
  - 8.2 miles per gallon gasoline.
  - 30 miles per hour speed.
  - 7 per cent grade on high gear.
- 20-tooth sprockets—
  - 9 miles per gallon gasoline.
  - 35 miles per hour speed.
  - 5 per cent grade on high gear.

#### Unselfishness.

Some men get credit for being unselfish out of not caring for many things that are desirable to others.—

#### Poor Old Dad.

"I want an auto,"  
Said Johnnie to his dad;  
So papa bought a runabout  
To please the little lad.

"Robert, buy a limousine,"  
Said Agnes to her spouse;  
And papa bought a limousine  
The color of a mouse.

"Electric cars are nice for girls,"  
Suggested Marguerite,  
And papa bought a brougham—  
He was so very sweet.

Now Johnnie runs his runabout,  
Ma motors near and far,  
Sis shops in her electric,  
But Dad

—he takes the car!

#### Compliments.

Some men pay compliments hoping thus to ward off payment of debts.

### The Air Compressor and the Diesel Engine.

The air compressor is an important and responsible auxiliary of the Diesel engine, especially when the latter is employed in marine propulsion. The following is a brief sketch of the motor equipment of the *Selandia*, which we suppose should be called an "oiler" instead of a "steamer," built in Denmark and recently started on its first voyage to Siam.

The main engines, built, like the vessel itself, by Burmeister & Wain, of Copenhagen, consist of two sets of 4-cycle Diesel motors, each with eight cylinders 20.8 by 28.7 inches, giving together 2,500 indicated horsepower at 140 revolutions per minute. At first sight their general appearance resembles that of ordinary reciprocating steam engines of the inverted marine type, but on inspection differences are quickly revealed, such as the closed-in crank pit and the long valve rods which stretch up from the valve gear to operate the four valves—air admission, fuel oil, starting, and exhaust—that are placed on the tops of the cylinders. The cam shaft, which actuates the valves, is driven at half engine speed through a small spur wheel on the crank shaft, which gears into a larger wheel mounted on an intermediate shaft. This latter, by means of cranks and connecting rods, drives a second shaft placed higher up, which in turn, by gearing, works the cam shaft. For each cylinder there are two sets of four cams; and according as one or other of these sets is in contact with the valve rods the direction of the motion is ahead or astern. When the engine is at rest the valve levers stand in an intermediate or neutral position clear of the cams, but when a start has to be made the cam shaft is moved an inch or so longitudinally to the right or left according to the direction of motion required and the valve levers are dropped upon the cams by a small compressed air engine mounted on the front of the engine casing. Reversing from full speed

ahead to full speed astern can be accomplished in less than 20 seconds.

Compressed air, at a pressure of 300 pounds per square inch, is also used for actually starting the engines. While the cam shaft is being got into the proper position the starting lever is in the neutral notch. It is then moved forward, admitting compressed air to the cylinders, and when the engine has attained the necessary speed, fuel oil is admitted by moving it still farther forward, the starting valves then closing themselves automatically. The amount of oil, and therefore the speed, is determined by the position of the starting lever in a series of notches at the back of the quadrant. The oil is forced into the cylinders at a pressure of something like 1,000 pounds per square inch by a pair of pumps placed above the starting lever, each pump serving four cylinders, and it is taken from a couple of service tanks in the upper part of the engine room casing, to which it is raised by a pump driven by compressed air. Each of these tanks hold sufficient for 12 hours' normal work. An Aspinall governor is fitted to cut off the oil from the cylinders should the speed of the engines become excessive, as by racing of the propeller.

For lubrication, oil is pumped through the main bearings, crank shaft, connecting rod brasses, connecting rod, cross-head brasses, and piston rod to the top of the piston rod, whence it is returned through the piston rod and is ejected upon the guide faces. These being cooled by the water circulation, it is there cooled, and if further cooling is required it can be pumped through an oil cooler. A special lubricating arrangement is provided to supply oil to the surface of the pistons.

For furnishing the necessary compressed air there are two three-stage compressors, one behind each of the main engines, driven by two auxiliary Diesel engines having four cylinders and developing 250 horsepower at 230 revolutions per minute. These deliver air at 300 pounds per square inch, which is

stored in four large cylindrical tanks. For injecting the fuel air is taken from these and raised to 900 pounds pressure by compressors fitted at the forward end of the main engines and driven from the crank shafts. Either of these compressors is able to provide sufficient for both main engines, but to meet the emergency of both being out of order, there is a compressor driven by steam obtained from a small donkey boiler. This is fired with oil fuel, and also serves for heating the radiators in the ship. Finally, arrangements are made so that the exhaust valve of one of the cylinders of the main engines can be removed and replaced by a delivery valve; that cylinder then acts as a compressor, if the fuel be cut off from it, and delivers air at 300 pounds pressure. Evidently, therefore, the total failure of the compressed air supply is an exceedingly remote contingency.

Besides driving the air compressors the two auxiliary Diesel engines each work a dynamo generating current at 220 volts. For lighting purposes this is transformed down to 110 volts, but it is used at its original voltage for driving most of the auxiliary machinery, including two pairs of lubricating pumps, circulating water pumps, hot and cold water sanitary pumps and bilge pumps, a carbonic acid refrigerating machine, the capstan, all the winches on deck, and the steering gear, which is on the Hele-Shaw Martineau system. Compressed air is employed for the ballast pump, and also for the siren, being taken for the latter purpose from the second stage of the main compressors at a pressure of about 120 pounds.—Compressed Air Magazine.

### A Familiar Sound.

Mrs. Jack was dining out with her husband and could not make up her mind what to order.

"Jack, what is it that those people behind you are eating?" she asked.

"I don't know," replied Jack, without turning, "but it sounds like soup."—From the Cincinnati Enquirer.

### Wine Samplers.

A good sampler of wine, unlike the cigar sampler, must not exercise his palate more than a single time at a sitting. Then he must drink quantities of water. Certain of them go to the trouble of gargling the throat before drinking the water to keep the sense of discrimination absolutely intact. The sense of sight is first brought into requisition by the sampler, then that of smell, the palate serving to confirm or refute the intimations thus gained.

The inspection demonstrates various things. For example, new wines are clear, while the older more yellowish in tint. While old wine is better than new, yet the old wine is never clear, while it is a bad sign if the new is even slightly turbid. Contrary to what is generally believed, it is by the odor that the expert is able to determine the vintage and to detect adulteration if there be any. The tongue also develops a sense which is much relied upon to measure the quality of the wine. The tongue of the expert sampler is able to tell slight differences in the "texture," so to speak, of the wine; whether it be harsh or mellow. He extends the wine over the entire surface of the tongue and keeps it there until it is warm. It happens very often that a new wine seems somewhat thin and harsh at first tastings, but, with repeated tastings, this effect wears away and it shows body and evidence of being very delicate of flavor.

### An Old One by Mark Twain.

When Mark Twain in his early days was editor of a Missouri paper, a superstitious subscriber wrote him saying that he had found a spider in his paper, and asking him whether that was a sign of good or bad luck. The humorist wrote him this answer and printed it:

"Old Subscriber: Finding a spider in your paper was neither good luck nor bad luck for you. The spider was merely looking over our paper to see which merchant is not advertising, so that he can go to that store, spin his web across the door and lead a life of undisturbed peace ever afterwards."

### The Trials of the Order Clerk.

In your issue of April last you published an article entitled, "The Trials of the Order Clerk" which I read with a great deal of pleasure, being in that line of work with a large manufacturing concern dealing largely with railroads through their purchasing agents.

The point that is beyond my comprehension is, Why orders, particularly those wanted for immediate shipment, do not state what is wanted. They will make it clear that the machine the repairs are wanted for will be idle until receipt of the repairs, but they have failed to designate what machine they refer to in order to determine what the repairs may be. It then requires rather a lengthy letter to draw out the necessary information, and instead of addressing this letter direct to the shops repairs are for, say, to the Master Mechanic, and getting reply direct from him, the letter must be addressed to the purchasing agent, and if you are writing from the East, the purchasing agent is in Chicago, and the shops in Kentucky, the reply reaches you in four or five weeks. In the meantime, according to the statement on the order the railroad is losing the use of the machine during all this time as well as the additional time to supply the material; and this machine may be worth anywhere from \$10 to \$100 a day. And it isn't at all unusual for the purchasing agent to write inquiring when shipment will be made while he is waiting for his reply from Arizona.

And why? Merely because the party in the shop whose duty it is to specify the repairs, don't do it in an intelligent manner; and it not only makes a loss to the road by keeping the machine idle, but costs considerable in clerical labor.

Recently an order came to the writer's desk from the purchasing agent of a leading eastern railroad requiring parts for a machine, worded in local terms, and not accompanied by a sketch to show what was meant. A letter is written for further information and reply received fifteen days later; feeling

there was some mistake we wrote again and received reply fifteen days later stating exactly what was wanted, which was altogether different from the first information.

It would seem to the writer that much valuable time could be saved, in the delivery of repairs if the shop engineer, or whosoever's duty it is in large shops to furnish the purchasing agent with the necessary information on which to base his orders, if they would accompany the requisition with a rough sketch giving the principal dimensions, and the numbers, if any, on the old parts to be replaced. A sketch usually gives more information than lines of description.

If you had a stove, say, twenty-five years old, and wanted a new part for it (you know what you want, and how badly you want it), and telegraph the manufacturer "Express quick plate for my stove," would you really expect to get what you want, as quickly as you want it? This is not an exaggerated example of what comes to the writer's desk frequently, and brings to mind the statement made not long since by a prominent attorney before an investigating committee to the effect that the railroads were losing a million dollars a day.

McC.

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### Called Home.

A noted clergyman whose pastorate is in a well-known city was spending a few days at the summer home of one of his congregation.

While seated on the piazza one afternoon with his hostess, her little boy and girl came running toward them; the former with a rat, held at arm's-length by the tail.

"Don't be afraid mother," he called. "It is quite dead! We beat him and beat him!" each declaration being illustrated by an imaginary blow on the rat. Then, feeling a deference might be due the clergyman, he said, in measured solemn tones and with uplifted eyes: "Yes, we beat him and beat him until—God—called—him—home."



Do you try to do those you are dunned by?  
\_\_\_\_\_

There is no need of guide-posts on the road to ruin.  
\_\_\_\_\_

A brunette may be fairer than a blonde in some ways.  
\_\_\_\_\_

A teaspoonful of gossip will taint a kettleful of pure truth.  
\_\_\_\_\_

Some people never forgive until they break into a padded cell.  
\_\_\_\_\_

Many a man works overtime because his wife needs the money.  
\_\_\_\_\_

On the level, did you ever see a woman who was speechless with rage?  
\_\_\_\_\_

But it isn't every weather prophet who is willing to bet on the result.  
\_\_\_\_\_

A man may have to go to jail in order to get the living the world owes him.  
\_\_\_\_\_

A conceited man is never so happy as when he is given an opportunity to place his conceit on exhibition.  
\_\_\_\_\_

Things are bound to take a turn and some day parents may be sent to bed in disgrace for talking back to their children.  
\_\_\_\_\_

It's just like a woman to begin figuring on how she will celebrate her silver wedding before she has been married two weeks.  
\_\_\_\_\_

Some people boast that they never boast.  
\_\_\_\_\_

Unkind criticisms are apt to come home to roost.  
\_\_\_\_\_

A woman with big feet is partial to long skirts.  
\_\_\_\_\_

It's improper to eat pie with a knife—but an ax is permissible.  
\_\_\_\_\_

But a woman doesn't care to boss the job if she can boss the boss.  
\_\_\_\_\_

Some men are willing to say nothing if others will saw the wood.  
\_\_\_\_\_

Everything comes to the man who waits—except the woman he is waiting for.  
\_\_\_\_\_

Life is a serious thing, especially to the man who regards it is an uninterrupted funeral.  
\_\_\_\_\_

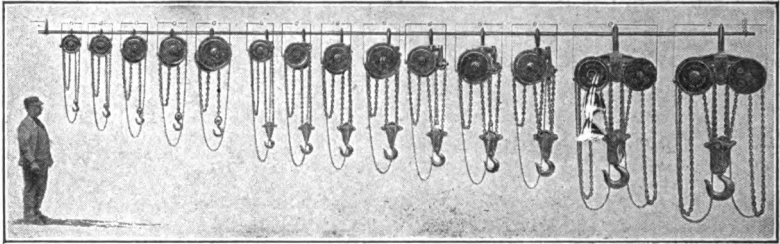
A husband should have an unlimited bank account in order to check his wife's expensive tastes.  
\_\_\_\_\_

What a girl likes about sitting on a park bench in the moonlight with a young man is that the moon may dodge behind a cloud at any moment.  
\_\_\_\_\_

If a man is in love with a woman she can make him believe black is white—until he discovers that she is in love with him.  
\_\_\_\_\_

**A GUARANTEE against DEFECTS for the Life of the Block goes with every**

# Reading Multiple Gear Chain Block



Self-Lubricating—works in any position—works in all kinds of weather.  
Try one 30 days—return at our expense if not satisfactory.

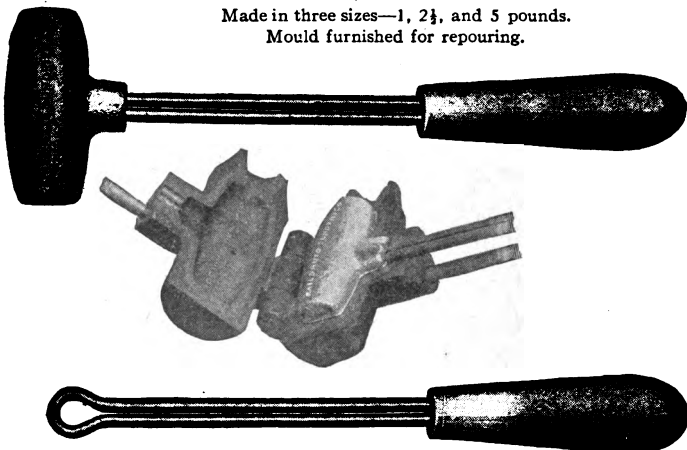
*Any Chicago Pneumatic Tool Salesman will take your order or we will send direct.*

## Reading Chain Block Company

Reading, Pa.

## If You Must Knock Use Soft Hammers

Made in three sizes—1, 2½, and 5 pounds.  
Mould furnished for repouring.



SOLD BY THE  
**CHICAGO PNEUMATIC TOOL CO.**

**1010 Fisher Building,  
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*Branches Everywhere*

**50 Church Street  
NEW YORK**

When writing to Advertisers please mention Ideal Power.

# IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances  
By THE IDEAL POWER PUBLISHING COMPANY  
Fisher Building Chicago

Vol. 10.

JANUARY, 1914.

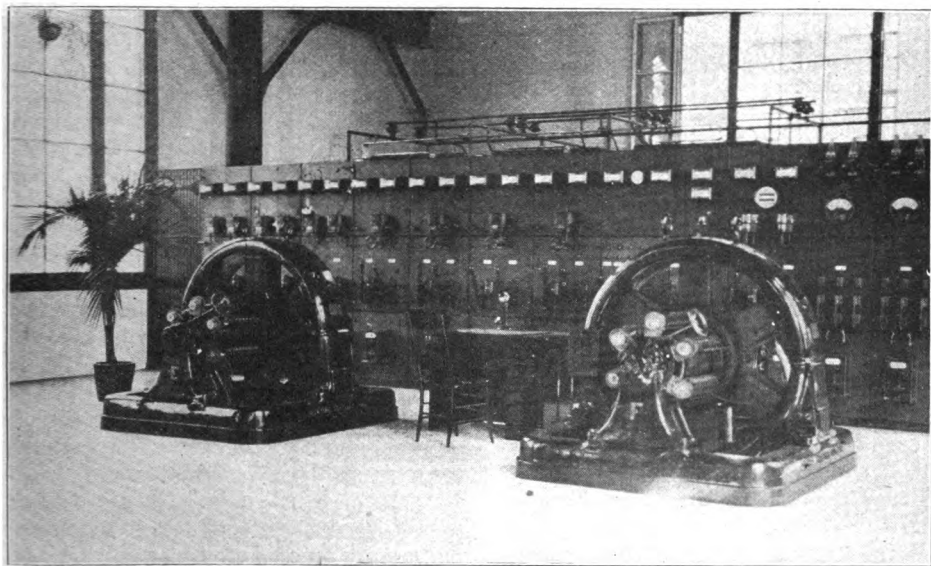
No. 10.

## Direct Motor Driven Compressor Installation

At Union Iron Works, San Francisco.

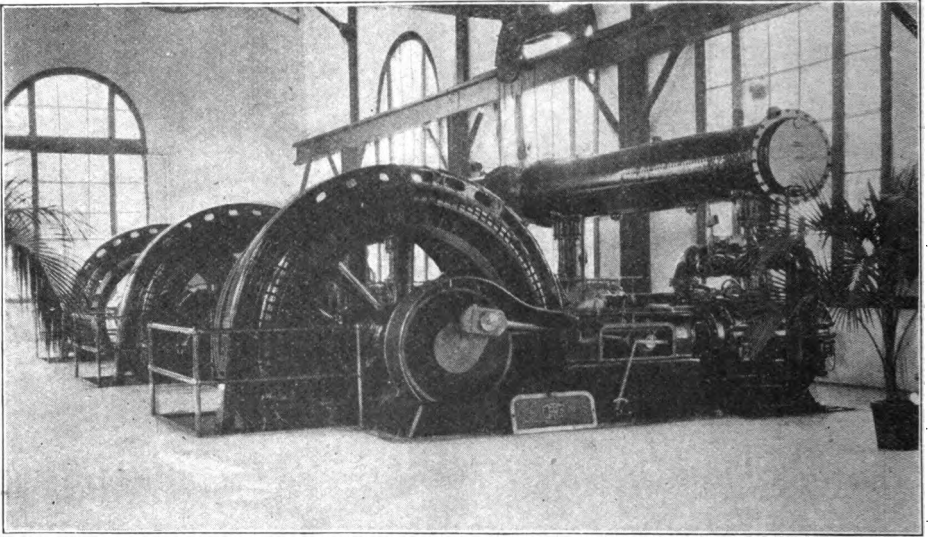
A compressed air plant having a total capacity of 7,500 cubic feet of free air per minute and furnishing air at 100 pounds gage pressure is shown in the accompanying illustrations. It represents an ideal installation of high operating economy, where the average demand for

air for known periods is appreciably less than the maximum capacity of the plant. Where such conditions exist the advantages of multi-unit installations are evident, when comparison is made with a single compressor controlling the entire capacity of the plant. Not only is a



Showing an end view of the Independent Exciters for the fields of the Synchronous Motors and of the switchboards. It was first proposed to use Individual Exciters driven by belt from each individual compressor. The superiority of Independent Exciters is readily seen from this photograph.





Three 28" and 17" diameter by 26" stroke Class M-CE Chicago Pneumatic Two-Stage Direct Connected Motor-Driven Air Compressors, installed by the Union Iron Works, San Francisco. Each has a capacity of 2580 cu. ft. of free air per minute (piston displacement) when operating at 139 R.P.M. and each Compressor driven by a 450 H.P. 440 volt, three phase 60 Cycle Self Starting Synchronous Motor.

These compressors are fitted with special guards over the cranks, allowing them to run open instead of enclosed, as would be standard with these compressors. The open crank guards are preferred by this user.

These compressors are fitted with special Intercooler Tubes, etc., to permit of the use of salt water cooling in the Cylinder Jackets and Intercoolers.

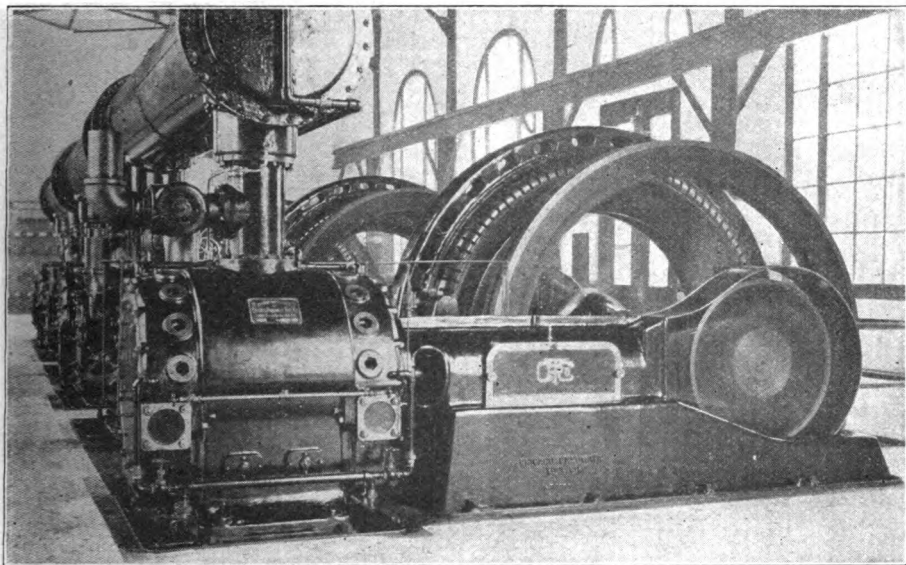
more satisfactory means of economical control assured for capacity variations, but still another point of extreme importance is taken care of by the use of more than one compressor. This is made clear when we consider the matter of a shut-down for any reason, and the loss incurred if the air supply is entirely shut off.

The above battery of compressors is located in the power house of the Union Iron Works at San Francisco, Cal., and consists of three Chicago Pneumatic Tool Co. Class M-CE Compressors. Each has a displacement capacity of 2,500 cubic feet of free air per minute, and operate against 100 pounds discharge pressure, at 138 revolutions per minute. They are each driven by a General Electric Co. 450 horse power Synchronous Motor mounted directly on the compressor shaft. This affords the most satisfactory means of driving high capacity compressors, thereby reducing to a minimum all frictional losses.

This type of compressor is designed to

stand the strain of the most severe operating conditions, and for compactness, simplicity and correctness of design they are unexcelled. They embody no features except those which the best engineering skill and years of practical experience have shown give the maximum all-around efficiency for this service.

A few of the more important features which are essential to a compressor of this type and capacity are briefly set down herewith. As liberal intercooling area as possible should be provided, to insure a low temperature of the air entering the high pressure side, and consequently to reduce the work of compression. The sizes of cylinders should be so proportioned that equal work is done in each under all conditions of load. Losses due to excessive clearance space should be reduced to the absolute minimum, in order that this feature may not interfere with the highest possible volumetric efficiency. Both inlet and discharge valve areas should not be less



The air is compressed by these three Chicago Pneumatic Compressors to a pressure of about 100 pounds and is distributed to the machine shops, plate shops and docks of the Union Iron Works Co., whose principal business is the building and repairing of ships, etc. This plant replaces a steam driven plant and is one step in the process of making the use of electricity for motive power the universal standard throughout these yards.

than certain well defined percentages of the entire cylinder area. All bearings should be of liberal dimensions to insure moderate pressures on the same under the most severe operating conditions. The lubrication of all bearings and other wearing parts should be efficient and positive. As above suggested, sufficient strength in all parts, together with neatness and skill as shown in the execution of the design, are also of prime importance to a well balanced machine.

These most important features and many others bearing more particularly upon the smaller details of the machine must be given due consideration, and the illustrations show how well those essential features which are apparent from a photograph are met by these Chicago Pneumatic Compressors. All of the points described above as so necessary for the attainment of the highest possible efficiency are met in these compressors, and they represent the most approved product of present day engineering skill applied to the design of direct motor driven compressors.

### Which Teaches Us to Make the Most Out of a Dilemma.

An American ship lay in an English port and the sailors were entertaining a few English seamen.

Shortly a spirit of rivalry arose. The sailors tried to outdo one another in athletic tricks.

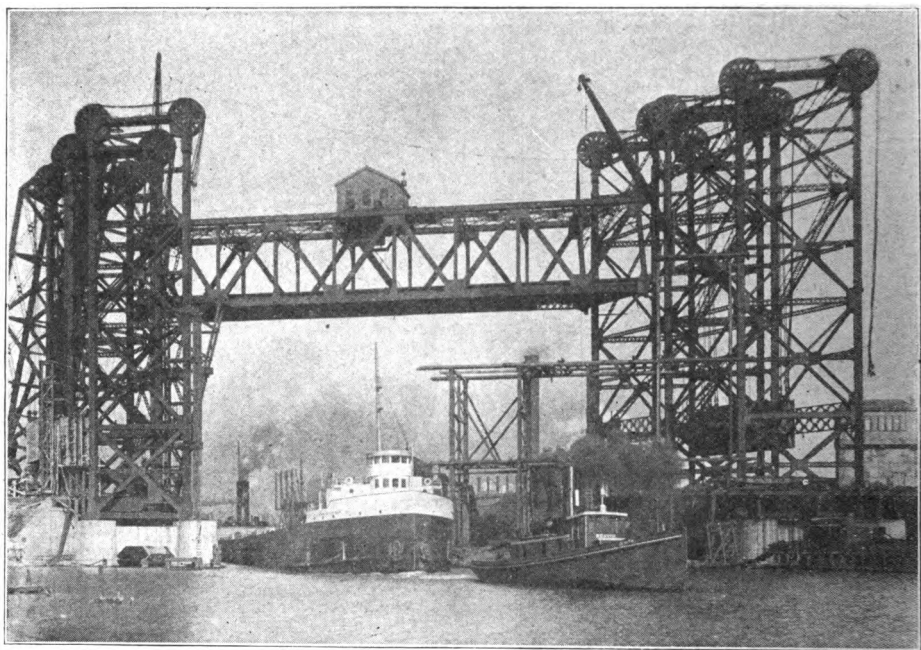
An Englishman climbed to the very top of the mainmast and there stood on his head.

"By jingo, no Englishman beats me!" one of the American sailors shouted.

He scampered up the ropes monkey-like and, reaching the top, prepared to duplicate the Englishman's feat. He put his head down and gave a push with his feet, and fell heels over head.

His back struck the first rope, his legs the next, his neck the next and so on, somersault after somersault, finally landing with rare good fortune squarely on his feet on the deck.

"Do that, you son-of-a-gun!" he shouted when he got his breath. "Do that!"—Yarns.



#### Artificial Fumes for Finding Leaks.

When steam escapes you can generally see it; when there is a leak in the ammonia pipe line it is most certainly evident; but when a leaky compressed air line is causing a waste it may go on for a considerable time undetected.

Others may profit by the procedure of an Illinois manufacturer who, at fixed regular intervals, puts essence of peppermint into the air tank and then has the entire system inspected for leaks. If the slightest amount of air escapes it is easily detected by the odor.—(Factory.)

#### Nothing Nefarious About Him.

One day a man was brought before a magistrate for stealing a cheese from a grocer's door, and the principal witness, a carter, told how he had seen the man take the cheese and had run up and held him. "Then you caught him in the nefarious act?" said the magistrate. "The what, sir?" said the witness. "You caught him in the nefarious act, I say," repeated the magistrate. "Not me," was the reply. "I caught him by the scruff of the neck!"

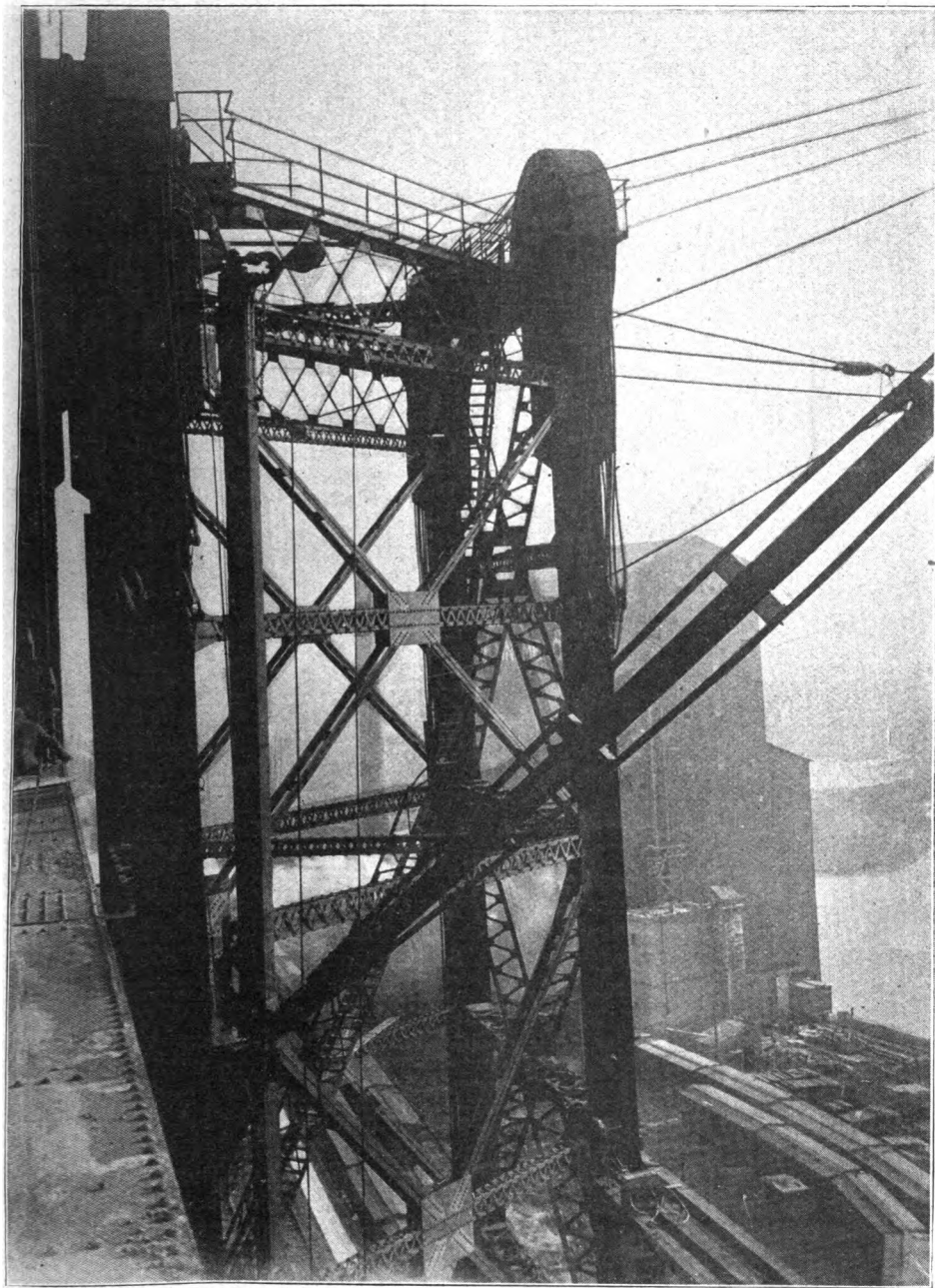
#### New Calumet River Bridge.

The above photograph shows one of the two new 210 ft. spans of the Waddell & Harrington vertical lift bridge over the Calumet river for the Pennsylvania Railway Company at South Chicago, Ill.

The bridges are identical in every respect. The north span, which is now in operation, will be connected up electrically with the south span when completed and both bridges operated from one tower by one man, but can be changed to single operation by the throwing of a switch.

The weight of one bridge complete is over 2,300 tons. The span, which weighs about 1,200 tons complete, is balanced by three 200 ton concrete slabs on each end. The 24 cables connecting each end of span to counterweight are  $2\frac{1}{2}$  ins. in diameter and pass over sheave wheels weighing 16 tons each. These sheaves are 14 ft. in diameter, and some idea of this immense size can be imagined by the photograph on page 300.

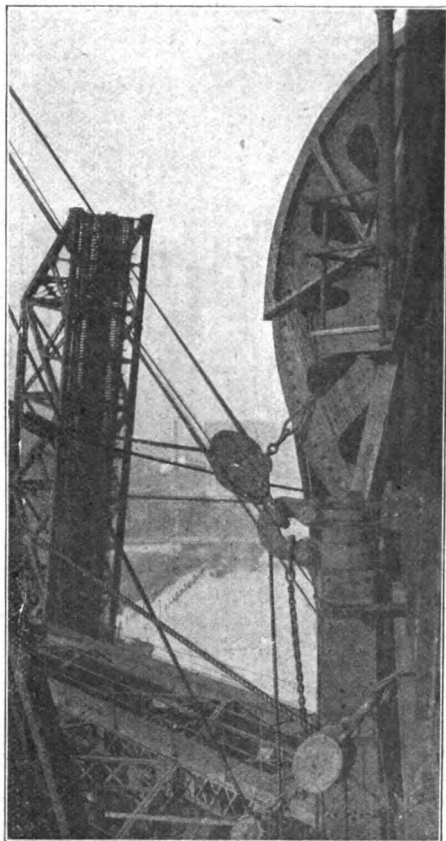
There are about 70,000 field rivets in each bridge and 300 blind holes to be drilled in castings in place.



The average number of pneumatic tools in use was five Boyer hammers, one "Little Giant" drill and two "Little Giant" wood boring machines, all of which were supplied through a 2 in. pipe

line 1,200 ft. long. Compressed air at 90 lbs. pressure was rented from a neighboring stationary plant.

This air line was carried under the ring in 16 ft. lengths of pipe coupled to-



Partial View of Sheave.

gether with an "L," a nipple and an "L," giving free play to the pipe and permitting the laying of it from a boat.

The erection of the north span, which is now in operation, presented unusual difficulties. The government insisted on a 75 ft. clear channel, and as one line of the channel was on line with the face of the pier on the west side, no false work could be placed in the river on that side. This problem was overcome by the placing of two "leaning bents" on the piers, one taking one panel of the span on one truss, the other taking two panels on the other truss. A portion of the one panel bent may be seen in the photograph, where it is shown re-erected for the south span.

Another unusual problem was that the operation of the Lake Shore bridge, which swings under the north span

when the draw is open, could not be interfered with. This was overcome by placing the false work for one truss on two 103 ft. guides, under which the bridge swung on three of the top chord for the south span placed in a similar way.

The Kelly-Atkinson Construction Co. of Chicago are the erecting contractors. The work was done under the direct supervision of Geo. Burtscher.

#### Public Service Company Uses Rockford Motor Cars.

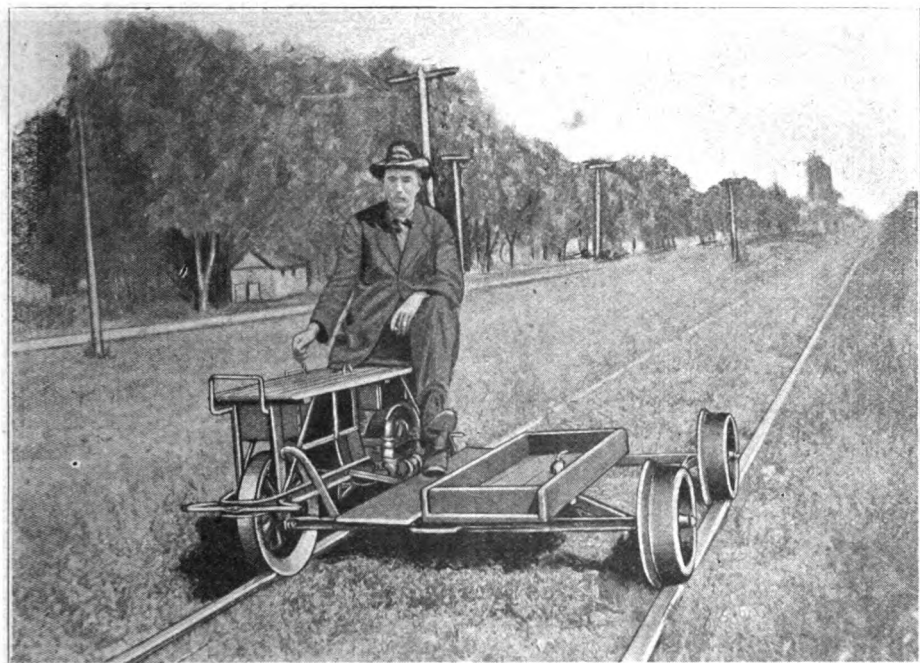
The Public Service Company of Northern Illinois has recently installed a 33,000 volt, 3 phase, 60 cycle transmission line between Pontiac and Odell, Ill. This was placed on tops of poles which carry trolley and feed wires belonging to the Bloomington, Pontiac & Joliet Electric Railway Co. Mr. John R. Staley, superintendent of construction, southern division, for the Public Service Company, states that he operated a No. 4 Rockford Dual Ignition Railway Motor Car on the right of way and tracks of the electric railway company without causing an interruption to their service. The line was built complete in six weeks with the aid of the motor cars, which could not have been done had it been necessary to transport men back and forth by street cars or teams.

Mr. Staley advises that the Public Service Company has two No. 4 Rockford Motor Cars operating at other points and these cars have more than paid for themselves on each job on which they have been used, as they are great time savers. An hour or two saved for a whole organization of men means a saving of considerable money.

Mr. Staley has used the Rockford Railway Motor Cars on construction work for a long time and states he cannot get along without them on work of this character.

Statistically Inclined Tourist (in Wales)—What is the death rate here?

Native—Same as it is everywhere else; one death for every inhabitant.



James Dupree and His No. 2 Rockford Car No. 20,233.

### The Rockford from the Standpoint of Miles and Dollars.

There is no better way of estimating the value of a Railway motor car, like the Rockford, than to consider a season's mileage in connection with the cost of upkeep for this period.

Mr. James Dupree, Supt. of Water Dept., Bridges and Building of the Chicago, Terre Haute and Southeastern Railway Company, has a No. 2 Rockford Motor Car No. 20,333. He has kept close tab on the performance of the car, as the following figures will show:

After being laid up for the winter, the car was placed in service on April 3, 1913. During April it ran 390 miles, May 690 miles, June 712 miles, July 1st to July 14th, 330 miles. From July 14th to August 26th, 1,645 miles. From August 26th to October 13, 1913, 864 miles. This together with the mileage made during 1912 makes a total of 11,931 miles.

On this mileage this car has run about 50 miles to the gallon of gasoline. The

repairs required in this period consisted of one sprocket chain to replace one worn out.

### To Keep His Memory Green.

The furniture dealer in the Grand Rapids hotel had waited fully an hour for the waiter to serve two courses.

"Now, my friend," said he, "will you fetch me some chicken salad?"

"Yes, sir," said the waiter.

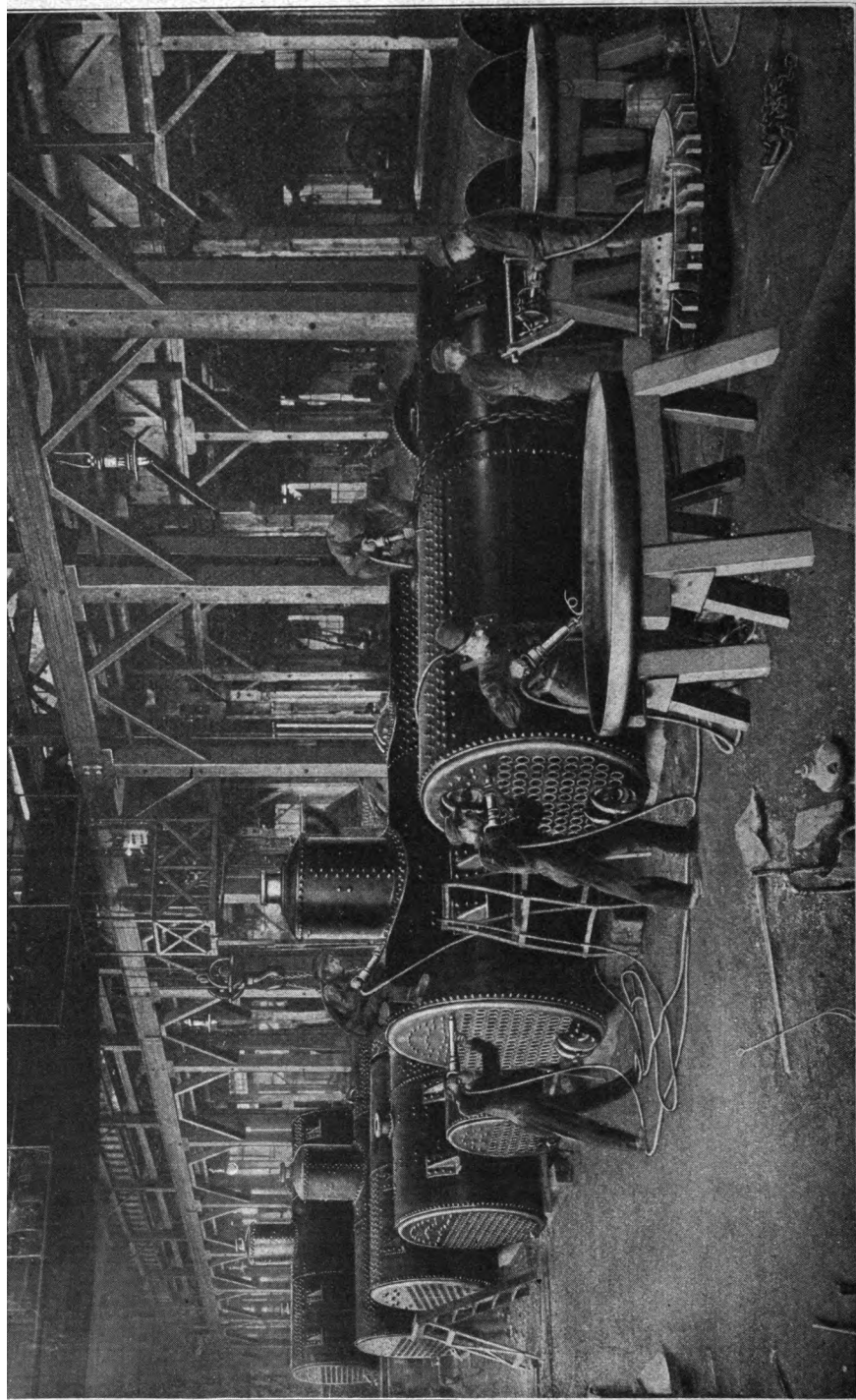
"And while you are away, you might send me a postal card every now and then."

"Say, Doc," said the brawny scrub-woman, "yer gettin' a perty good thing out o' tendin' that rich Smith boy, ain't yer?"

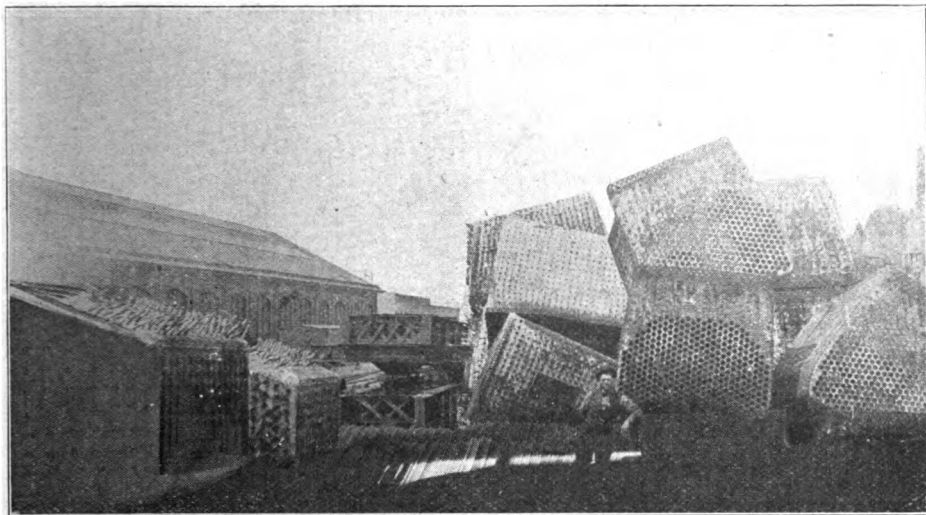
"Well," said the doctor, "I get a pretty good fee, yes. Why?"

"Well, Doc, I 'opes yer won't fergit that my Willie threw the brick that 'it 'im."





Scene in Boiler Shop of Samuel Smith and Sons Company, Paterson, N. J.



S. E. Westover and the Work Done by Him in One Year With Chicago Pneumatic Tools for the O-W. R. R. & N. Co. at Albina Shops.

We present herewith view of the boiler plant of Samuel Smith & Sons Company, Paterson, N. J. This is an old-established concern, having been continuously in business there since 1844. For many years their product was largely locomotive boilers for the Rogers Locomotive Works and for railroads throughout the country, and to-day their boilers are in use in many of the large power plants throughout the country. They have an excellent equipment of hydraulic, electric and pneumatic tools, with electric cranes which handle all material receiving or incoming from, and loading the finished product on, the cars, the Erie Railroad having switch track into the shops. The business at present is more general in the way of horizontal, vertical and locomotive boilers, as well as tanks and smoke stacks.

#### Her Preference.

Before the fire Christmas eve two old maids were planning for the holiday.

"Sister Molly," said the younger, "would a long stocking hold all you'd want for a Christmas gift?"

"No, Elvira," said the elder, "but a pair of socks would."

#### Chicago Pneumatic Tools in Railroad Work.

The tools shown in the picture are made by the Chicago Pneumatic Tool Company, being the Boyer Hammers and Little Giant Drills, all operated by a "Chicago Pneumatic" Air Compressor, built by the same company.

The above mentioned photo show the amount of work done in one year by Chicago pneumatic tools at the Albina shops of the Oregon-Washington Railroad and Navigation Company by Mr. S. E. Westover, boilermaker foreman.

Mr. Westover says that the following tools were used in this work: No. 2 Little Giant Drills were used for drilling stay bolt holes and new fire box sheets. Nos. 80 and 90 Boyer Hammers were used for riveting. Pneumatic holders were used to hold on rivets and stay bolts. All stay bolts were driven with No. 90 Boyer Hammers equipped with special sets. The No. 2-BK Chipping Hammers were used to do the chipping and calking. The No. 10S Little Giant Midget Drills were used to drill tell-tale holes in stay bolts. The Little Giant Reversible Drills were used for flue rolling. They also used Little Giant Drills for the different kinds of drilling that was necessary.



# IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air  
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.

1014 Fisher Building

CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. 10. JANUARY, 1914. No. 10.

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## A Convention That Made History.

The tenth annual convention of the sales and factory organizations of the Chicago Pneumatic Tool Company was held at the Great Northern hotel, Chicago, January 7th to 10th, inclusive, concluding with a banquet on Saturday evening. About a hundred sales representatives and all of the managers and factory superintendents, including representatives from England, Russia, Italy and Canada, were present and put in four interesting but strenuous days in exchanging views, watching tests and demonstrations, and, in general, of getting the other man's point of view for future benefit and application.

President W. O. Duntley opened the meeting Wednesday morning, January 7th, with an address of welcome, congratulating the district managers and their salesmen on their success in making 1913 the banner year and complimenting the factory managers on their splendid showing in supplying a most unprecedented demand for the products of the company. After J. G. Osgood, general district manager, had supplemented Mr. Duntley's remarks with a few words of welcome and appreciation, the meeting was turned over to Mr. W. P. Pressinger, general manager of the air compressor department.

Mr. Pressinger reviewed the work of the past year and announced some new and interesting projects which the com-

pressor department has planned for the ensuing year.

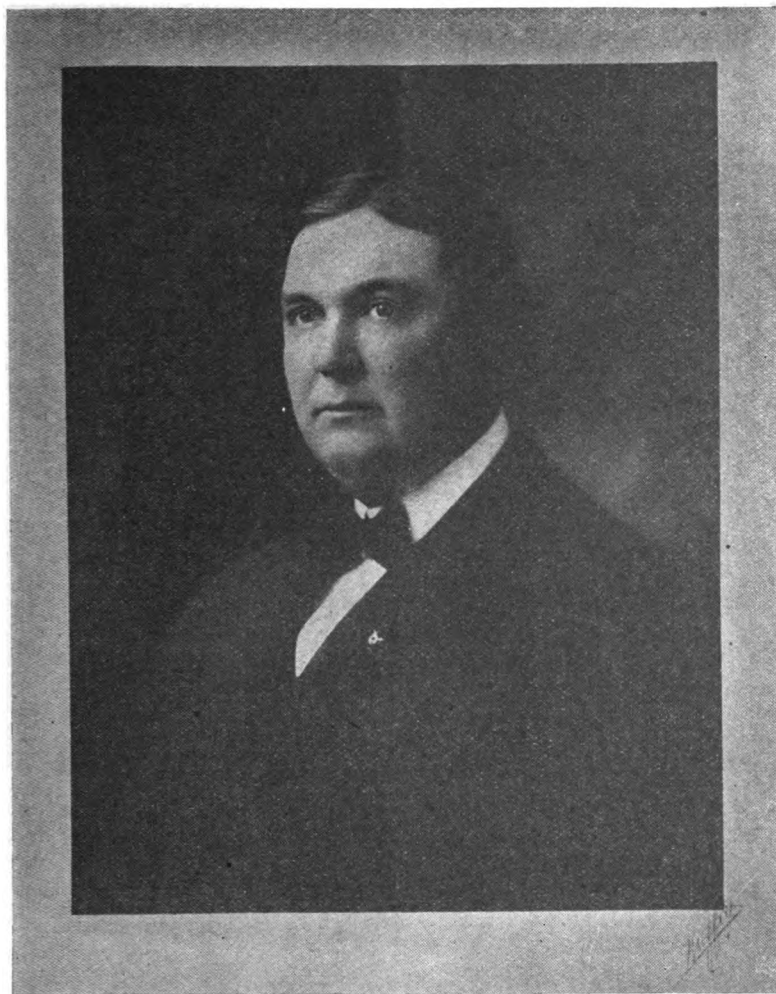
W. H. Callan, manager of the compressor plant at Franklin, Pa., explained in detail the construction and operation of a number of new features of compressor construction, some of which as improvements are quite radical departures from current compressor practice.

An interesting feature of the afternoon was a mock sale. Cold shivers ran down the spines of more than a hundred salesmen when Mr. Pressinger announced that lots had been drawn and that a number of salesmen had been impartially selected to mount the platform and sell an air compressor to Mr. L. I. Yeomans.

Mr. Yeomans, at present the company's efficiency engineer, has been consulting engineer and purchasing agent for some of the largest corporations in the world.

Mr. A. E. Swanson of the Chicago office was the first victim. He approached the ordeal and plunged into his task with ease and confidence. He warmed up to his work with persistent aggressiveness, all his arguments being skilfully parried by his make believe prospective purchaser. The astuteness of Mr. Yeomans and the resourcefulness and clever salesmanship displayed by Mr. Swanson were about evenly matched. No sparring bout was more interesting and exciting, and when, after the half hour battle had ended, Mr. Swanson had not only "sold" his compressor but had covered himself with glory and had won the admiration of the entire convention. A similar "sale" was made by Mr. H. B. Griner of Philadelphia, after which the convention adjourned for the day.

On Thursday morning the convention was opened by Mr. C. E. Walker, manager of the railroad department. Among the new or more recent devices that are of interest to railroads and that have been added to the line are the Zerbe Safety Valve Discharge Register, the Boyer Speed Recorder with clock attachment and the Sectional Steel Metal House.



Mr. W. O. Duntley, President of The Chicago Pneumatic Tool Co.

Mr. L. J. Zerbee explained the operation of the safety valve discharge register and presented figures showing the almost unbelievable economies that are possible to effect by keeping a check on the "popping" of locomotives. Elsewhere in this issue we print quite a complete description of this register and invite the attention of interested readers to it. The operation of the new Boyer Speed Recorder with clock attachment was explained by Mr. Walker, and Mr. Frank Winch addressed the meeting on the subject of steel sectional buildings

which the railroads are rapidly adopting as tool houses and outbuildings and for any purpose where shelter is desired.

The convention opened Thursday afternoon with Vice-President G. A. Rees in the chair. Mr. Rees has charge of the commercial car department and matters pertaining to the Little Giant truck were brought up and discussed. The truck department has grown from small beginnings until it is now one of the big departments of the company. As a matter of fact the company now sells more one-ton trucks—its specialty—than

any other truck concern in the world, and is the fourth largest builder regardless of carrying capacity. A feature of the afternoon was a mock sale in which E. S. Cole, representing the Corby Supply Co.—the company's St. Louis agents—"sold" a truck to E. P. De Gollier, who represents the tool company in Cleveland.

On Thursday evening the convention met at the company's salesrooms, 1470 Michigan avenue, where a series of scientific tests and demonstrations of Little Giant drills and other products of the Cleveland plant were made. Mr. H. J. Kimman, manager of the plant, had charge of the meeting. Some new types of drill were shown and a number of improvements in the older types were presented and explained. The elaborate and highly refined testing apparatus, through which all Little Giant drills pass before they leave the factory, and the accurate data concerning them, which it is possible to obtain, excited the interest and admiration of all who had not seen such tests before.

The interest of the convention on Friday morning centered in the new products and improvements that have recently been developed by the Detroit plant of the company, and Mr. L. E. Summers, manager of the plant, spent a considerable part of the session in telling the salesmen of the work done along these lines.

After this Mr. Osgood took charge of the meeting and proceeded at once to open the "question box," which had been installed several months ago and to which all the salesmen of the company had been invited to contribute. The questions ranged from the simple to the complex, but with the array of manufacturing and selling talent that was on hand the most difficult ones were answered to the satisfaction of all, notwithstanding some of them provoked considerable discussion. The "Question Box" promises to be a permanent feature of tool company conventions.

The Friday afternoon session was largely devoted to addresses from the company's foreign representatives who

were present. They all had interesting stories to tell of the business conditions of their respective countries and of the peculiar business customs and requirements of their trade. Lack of space prevents our making more than this mere mention of their contributions toward the interest of the convention, but we shall at an early date give our readers some of the data and information they brought to us. The speakers were: W. G. Corner and Ernest Martin of London, Ernest Eklund of St. Petersburg, Gustavo Cuocolo of Milan, Italy, and Geo. Sheppard of Montreal.

On Friday evening the convention was resumed at the salesrooms on Michigan avenue, where the mining department had a working exhibit of rock drills, stoping drills, one-man drills, hand drills, coal drills and mine hoists. Mr. Henry Hellman, manager of the mining department, had charge of the meeting. The tests were interesting and instructive, and many new machines were shown. After Mr. M. W. Sherwood, assistant manager of the department, had explained the mechanical details of the new devices, Mr. Theo. Wachs, superintendent of Franklin Plant No. 2, told the salesmen of the excellent facilities of the plant for turning out work efficiently and in quantity.

On Saturday morning Mr. C. B. Coates, manager of the electrical department, opened the convention and led in discussions that were prompted by the "Question Box." Some new and very interesting electrical devices were presented and much valuable technical information was given to the men.

Throughout the convention, in order to save time, luncheon was served at 12 o'clock each day in the fraternity hall of the Great Northern. At luncheon on Saturday Mr. David J. Champion, vice president and general manager of the Champion Rivet Company, Cleveland, was guest and while he claimed he was no speech maker, he delivered himself of a short wholesome address that was worth a great deal to hear. The destinies of the steel rivet and the pneumatic riveting hammer do not lie

far apart, and Mr. Champion showed that the success of one meant the success of the other.

Saturday afternoon was given over to general closing with short talks by the salesmen on general matters of interest. President Duntley took occasion to thank the boys for their punctuality and attention throughout the convention. As a past master in the art of salesmanship, Mr. Duntley is at his best when presenting and analyzing the qualifications of a salesman, and all who listened to him were encouraged and inspired.

At the close of the meeting the boys were cautioned to cease all mention of business, and were informed that until the festivities of the evening were over it would be a dangerous thing to talk shop.

Just before the meeting was adjourned Mr. Duntley was presented with a set of beautifully engrossed resolutions in memory of his father, J. F. Duntley, who died April 5 of last year. They were read aloud to the convention by Mr. Aldcorn, one of J. F.'s oldest friends. Mr. J. F. Duntley's demise was the first break in the ranks of the "Old Guard" and his absence from the convention, where he had always been a conspicuous figure, was felt by all.

At 7 o'clock the banqueters—164 of them, consisting of the salesmen, factory managers and superintendents, department managers, office employes and a few invited guests—sat down to a very elaborate spread, music and singing by Barbino's harp orchestra and the Neapolitan trio supplying the entertainment.

Mr. Fred Richmond of Salt Lake City with a few appropriate words presented President Duntley with a Grandfather's clock as a token of esteem and appreciation on the part of the salesmen and other members of the organization. The clock stood directly back of Mr. Duntley and without any ado proceeded to tick its way along, announcing the quarter hours with sweet mellow chimes and striking the hours as they passed, all too quickly that evening.

The speech making was exceptionally interesting. Mr. J. W. Duntley, the

organizer and first president of the Chicago Pneumatic Tool Company and who is now president of the Duntley Pneumatic Sweeper Co., told of the early days. President Duntley, his brother, alluded to him as the daddy of the pneumatic tool business, and he was warmly applauded by all, many of those present having been associated with J. W. for years in the earlier days of the company. Among the other speakers of the evening were Messrs. Eklund, Cuocolo, Corner, foreign representatives, and the members of the old guard, Messrs. Aldcorn, Beardsley, Walker, Pressinger, Hunter, Booth and Smith. There were also addresses by Messrs. Seelig, Osgood, Rees, "Doc" Bateman, Mr. Carpenter of El Paso and Messrs. Sheppard and Allan of Montreal.

There were also addresses by Mr. Ban Johnson, president of the American Baseball League, and by Mr. John Meloy. Mr. Duntley read letters regretting their inability to attend from Mr. Chas. M. Schwab, John R. McGinley, chairman of the executive board, and from Fred Johnson, managing director of the company's European branch, the Consolidated Pneumatic Tool Company. A toast was also drunk to Mr. Ludwig Oberauer, manager of the company's German subsidiary. Mr. Oberauer had planned to attend the convention, but was taken ill on the eve of his departure. A quartet under the leadership of Geo. Russell Giroux furnished entertainment at intervals that was very much appreciated. A feature of the evening was a monologue in Swedish dialect by Harry Soady.

As a whole the convention was the best ever held by the company. From the opening of the meeting on Wednesday morning to the closing Saturday afternoon every one in attendance was strictly "on the job." Great good will surely come from this meeting, and President Duntley is to be congratulated not only on his foresight and discernment in seeing the value of these conventions, but on the able manner in which he conducts them.

### The Zerbee Safety Valve Discharge Register.

It is an ingenious device invented by a master mechanic in response to a call from the general manager and superintendent of motive power to stop popping. It consists of a timing arrangement or clockwork, which when clamped around a safety valve starts running when the safety valve opens and stops when the valve seats, thus giving you the length of time the valve was open. In an effort to make the device fool-proof it is so arranged that by a simple adjustment the register will operate continuously except when the pops are blowing. In this case the register clock is set at the current time on leaving the terminal; then any difference in the time of the register clock and the current time on arrival of the engine at the opposite terminal represents the time that the valve was open on the trip.

Having this information and the rate of discharge through any given valve at any given boiler pressure, and the fuel required to evaporate any given quantity of water, the loss in both fuel and water is readily calculated. Thus, if a 3 in. valve is open one minute on a boiler carrying 200 lbs. pressure the loss would be 19.71 lbs. of coal and 146.66 lbs. of water. The dial of the register is so arranged as to automatically calculate the loss in fuel and water for a 3 in. valve on a boiler carrying 200 lbs. pressure.

The next question that will arise is: How long are the pops open? It has been found by tests that the pops are open on an average of from 30 to 35 per cent of an engine's working time, which means approximately two hours per 100 miles for the working pops and one-third of that time for the high pressure pop. Could all of this popping be stopped? Assuming in this case a boiler carrying 200 lbs. pressure and equipped with two 3½ in. pops, it would mean that 3,979 lbs. of coal and 3,552 gals. of water would be saved for every 100 miles made by your locomotives.

It is not claimed that by means of the

Zerbee safety valve discharge register you can stop all of the popping, but it is possible to stop 75 to 90 per cent of it. This means that the device will save you approximately 3,581 lbs. of coal per 100 engine miles.

The average freight engine makes about 3,000 miles per month. At the above rate of saving, 47.64 tons of coal would be saved per engine per month. Suppose you have 500 engines, with coal as low as \$1.25 per ton. You would save \$357,300 per year for fuel alone. You will also save nearly a gallon of water per pound of coal. Often 500 to 600 gals. more water will prevent an extra stop, and save the fuel consumed in starting a long train away from a water station. The water alone saved will more than pay the cost of operation and maintenance of the device.

How often have we heard the engineer say after arriving at a terminal: "That engine sure is a dandy steamer; that fire boy just kept her howling the entire trip," while the fireman will say: "That old girl certainly is a free steamer; she had her white flag out all over the road." These men mean all right, but they do not realize that every minute she is "howling" that such a tremendous amount of the company's fuel is being wasted. When an engine crew is brought to realize that every minute spent popping off means not only a waste of fuel, water and boiler life, but good hard labor as well, they will bend their efforts toward economy.

The results of a few tests as shown below will suffice to show where we get the data from which we base our claims as to the extent of popping, and the per cent it can be reduced by the Zerbee safety valve discharge register.

Test No. 1. It was found by allowing two engines equipped with registers to run two months that the safety valves averaged open 2 hours and 54 minutes per run of 140 miles. The fourth month on 25 engines this figure was reduced to 45 minutes, bringing about a saving of 3,333 lbs. of coal per average trip.

Test No. 2. (Same road as Test No.



A Little Giant in the Candy Business.

1.) On comparing the performance of 18 engines not equipped for two months with the same 18 engines equipped the two following months a saving of 22.15 per cent in fuel was shown in favor of the latter.

Test No. 3. On a 228-mile trip on fast freight the popping was reduced from 4 hours and 50 minutes to 53 minutes, saving 6,415 lbs. of coal per trip.

Test No. 4. (Same trip as Test No. 3.) On slow freight the popping was reduced from 5 hours and 6 minutes to 32 minutes per trip, saving 7,363 lbs. of coal.

Test No. 5. For 12 hours of working service popping was reduced from 1 hour and 30 minutes to 13 minutes, bringing about a saving in coal of 1,400 lbs.

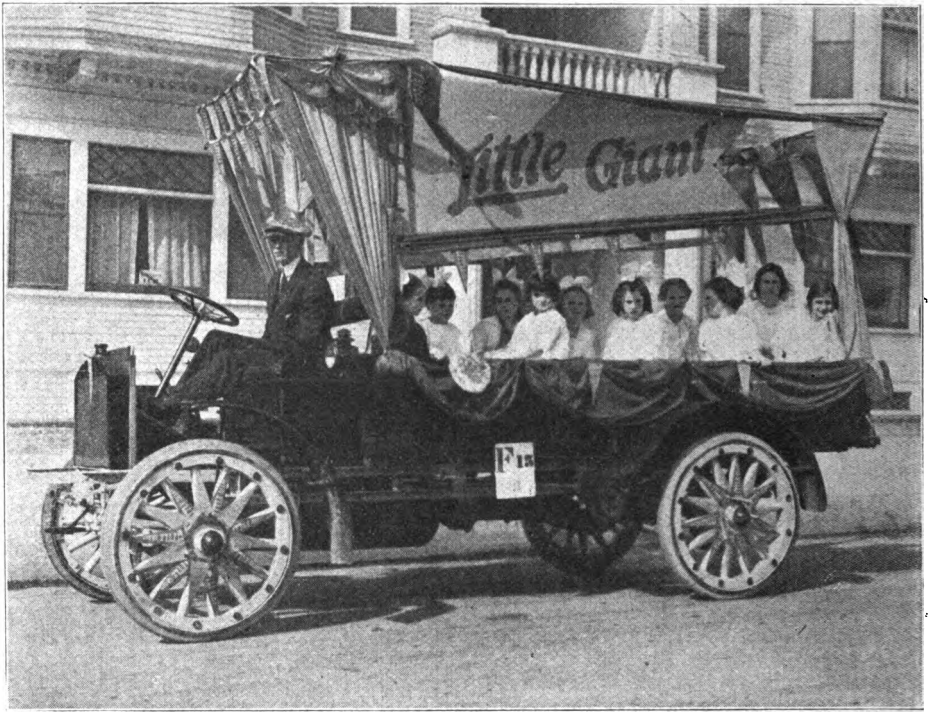
Test No. 6. (Same road as Test No. 5.) On comparing the performance of an engine equipped with the average performance of 17 engines not so equipped for the same month a saving

of 10.55 per cent in fuel was shown in favor of the engine equipped.

In Bulletin 167, issued by the Chicago Pneumatic Tool Company, a table is given showing the loss in actual fuel cost with pop valves ranging from 2½ in. to 4 in. in diameter under boiler pressures from 140 to 220 lbs. The bulletin and other information will be supplied on request.

#### A Little Giant in the Candy Business.

The Little Giant Truck shown in the above photo was purchased by the Merchants' Candy Company from the F. C. Richmond Machinery Company, Salt Lake City, is one of the busiest vehicles in the city. It makes five or six trips to the freight depots daily to deliver outgoing shipments and also handles deliveries to Salt Lake City dealers. The company is much pleased with the performance of the truck and does not hesitate to recommend it to those seeking a machine that will give service.



A Little Giant Truck in the Parade Celebrating the Completion of the Los Angeles Aqueduct.

#### Los Angeles Aqueduct Celebration.

In the first week of November the city of Los Angeles, Cal., celebrated with imposing ceremonies the inauguration of its great aqueduct. This monumental engineering work, details of which have had mention in our pages from time to time, was to Los Angeles what the Catskill aqueduct was to New York. It represents eight years of work and \$24,500,000 in expenditure. It will bring pure mountain water from the snow-capped Sierras, a distance of 260 miles across deserts and through mountains. It will deliver 258,000,000 gallons of water every twenty-four hours to reservoirs nearly 1,000 feet above the city. This is enough to supply a city of 2,000,000 inhabitants, and Los Angeles is not that—yet.

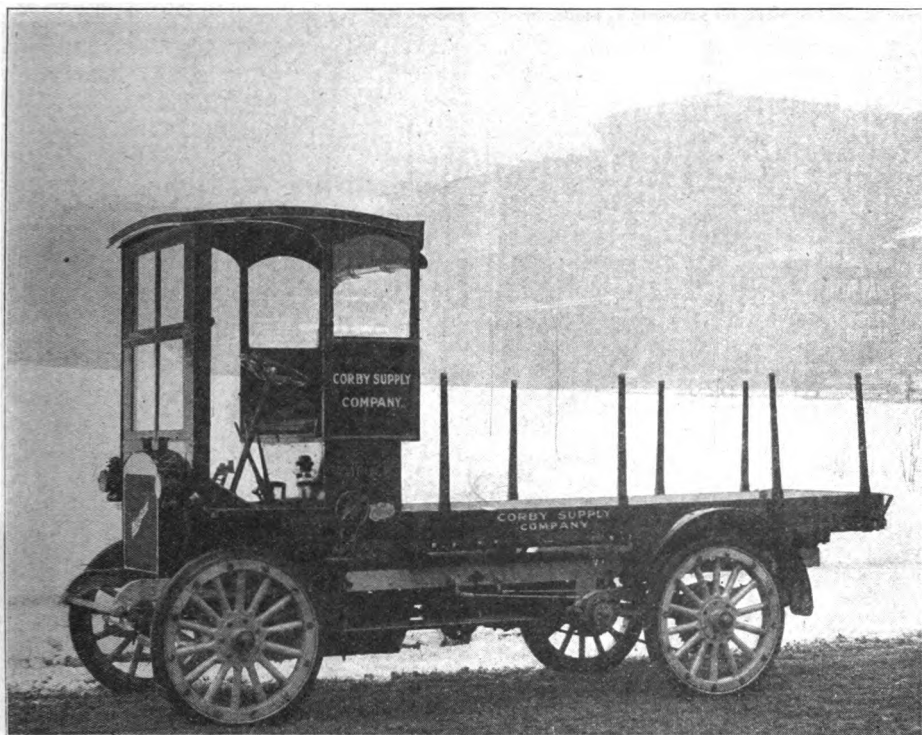
Misdirected charity is the mother of many hobos.

#### Quite a Run.

It's an overworked word, that poor little monosyllable "run."

"I found a run started in my best stocking this morning," said the woman, "so I thought I'd run downtown and go into ——'s, where they are having a great run on silk hose. They ran an advertisement in this morning's paper; you know. Well, I ran my eye over the bargains on the way down and I saw so many things I needed that I ran out of money before I got to the hose counter. Well, I'd run my legs off by that time, but I don't run a bill at ——'s, so I was in despair until who should I run into but my husband. I got more money of him—he's more generous than the general run of men—but when I got to the counter they'd run out of my size. Wasn't that a terrible run of luck?"

And so she ran on and on and on.



New Model H Little Giant Owned by the Corby Supply Co., St. Louis.

### Absolute Proof.

A man who had received a jury notice pleaded deafness as his excuse for not attending.

"I really am deaf," he said to the clerk who was enrolling the names.

"Prove it," said the clerk.

The man hesitated, then his face brightened as an organ commenced to play in the street outside.

"Can you hear that organ?" he asked.

"Yes," replied the clerk.

"Well, I can't," replied the man, triumphantly.

### A Blessing.

The following card of thanks recently appeared in a Kansas paper:

"I wish to thank the city authorities for quarantining my family and me for three weeks recently because one of them had the smallpox. During that time

my wife caught up with her sewing, we had three square meals a day, as no one came in and she was not permitted to leave; we enjoyed three weeks of good night's sleep, and best of all, a cousin with four children had arranged to visit us but saw the smallpox sign on the door and left town so scared she will never come back again. So for these and other blessings we are very thankful for the quarantine.

Scene—A smoking compartment in a Pullman car.

Old Gent' (to Pat)—Young man, allow me to inform you that out of every ten cases of men suffering from paralysis of the tongue nine are due to smoking.

Pat—Sorr, allow me to infor-rum you that out of ivery ten men suffering from broken noses, noine are due to the habit o' not minding their own business.



### Etiquette for Theatergoers.

For Ladies—be late—better late than ever early. Rustle your silks as you pass down the aisle. When you arrive at your row look freezingly on the poor chumps intent on the play. When they get up to let you in, squeeze past them in such a manner that the aigrettes on your hat tickle their noses. When you have reached your seat, remain standing until you have taken off your wraps—no hurry. You need not remove your hat until you are requested to by the usher. Try to interest the lady next to you on the topic of domestic help, and if you know what's coming in the play for goodness' sake tell her. She's anxious to know. Whisper loudly enough so that everybody near you may hear.

For Gentlemen—Throw away your seat check. This always furnishes diversion for those near you in case there is any dispute about your seat. Don't get up to take off your overcoat until about the middle of the first act. Go out between acts, not necessarily for liquid refreshments, but merely as an evidence of man's privileges. Sit with your knees in the back of the party in front of you. If an opera, hum the airs with the orchestra, so that those nearby will know that you are a blasé, hardened old theatergoer. Look bored during the best parts of the performance and render the audible verdict from time to time that the show is "rotten." Never applaud. Actors do not like to hear applause—it annoys them.

### Stung.

"Gracious! That skirt is so tight that I can plainly see what you have in your pocket!"

"But I have no pocket!"

"Then what is that lump?"

"Oh, that's a mosquito bite."—Selected.

"How do you tell bad eggs?" queried the young housewife.

"I never told any," replied the grocer, "but if I had anything to tell a bad egg I'd break it gently."

### How To Save for a Home.

We notice an article in a current number of the Old Women's Ragazine on "How to Save for a Home on Six Dollars Per Week." They were a young married couple. They didn't have any laundry done. He tended the furnace himself. He walked to his work. She got down on her knees and scrubbed. They lived on breakfast food and dried apples. When his clothes became shabby he wore them inside out. She re-trimmed the hat she was married in until she wore it out. She bought a piano on the installment plan—\$1 down and 10 cents a month for a thousand years. They sat in the dark in the evenings in order to foil the gas meter. He half-soled his own boots. They put their child to board in the orphans' home. She diluted the milk to make it go farther. He smoked ropes instead of cigars. He had a clerical position, and stood up at his work to keep from wearing out his trousers. She looked at the billboards instead of going to the theater. Then, when they had saved enough money to buy a home, the bank where they had placed their money for safe keeping failed, and they lost all. It is one of the most pathetic things we ever read. It made our heart ache like a tooth, and we had to stop seven different times to brush the tears out of our eyes so that we could see what we were reading.

Little Jimmy came to Toronto from his northern Ontario home, where colored folks are hardly ever seen. One day when he was out walking with his Uncle Bob they happened to pass a colored woman, and the following conversation took place:

"Say, uncle, why did that woman black her face?" said Jimmy.

"Why, she hasn't blacked her face—that's her natural color," said uncle.

"Is she black like that all over?" asked Jimmy.

"Why, yes."

"Gosh, uncle, you know everything, don't you?"



A vivid imagination is as dangerous as a little learning.

The art of pretending is not confined to regular actors.

If we sing our own praise we must provide our own encore.

Give a woman plenty of rope and she'll use it for a clothesline.

It keeps some men busy explaining foolish things to their wives.

We can readily believe that many people are saddest when they sing.

A man who makes a bluff at hustling succeeds in making others tired.

A conscientious man should back up the good opinion he has of himself.

If a man can't make a noise in the world in any other way, he shoots off his mouth.

Some people think more of dogs than they do of their friends—and perhaps there's a reason.

The girl who marries the first chap who proposes misses a lot of more or less valuable experience.

A genuine curiosity would be a man who keeps his mouth shut and lives to regret it. We have never seen a genuine curiosity.

A conceited man is one who thinks he isn't.

Some people mistake notoriety for fame.

But the supply of wild oats exceeds the demand.

A man's deeds attract more attention than his creeds.

A flirt is always on the go, but she never gets anywhere.

It is a toss up between a many sided man and a two faced woman.

Many a nervous woman has solved the problem of perpetual emotion.

Fortunate is the man who can make his running expenses slow down to a walk.

Here's the sorrow of it: Even the hero who died for his country is a dead one.

There's more room for improvement than there is satisfactory building material.

It's as difficult for a man to understand a woman as it is for a woman to understand herself.

If the wolf that hangs around a poor man's door could only be trained to convert bill collectors into mincemeat!

## Bridges or Brains—Which ?

Hundreds of years ago a river flowed from the mountains of northern China to the sea. Although the river was not deep the current ran swiftly, and coolies carrying heavy burdens could not ford it. So the Chinese built bridges across it—queer, hump-backed stone bridges—such as you will see pictured on Chinese “willow” plates, and over these the coolies crossed in safety.

Years passed: The river, never very deep, began gradually to dry up. It grew steadily shallower, and the current ran less swiftly than before; but still the coolies used the bridges. Their ancestors had used them, and it never occurred to anyone to do otherwise.

Today, where once a swift river flowed, there is but a shallow, dusty ditch, down the middle of which occasionally trickles a sluggish thread of water; but still the coolies toil with their heavy loads over the steep, crumbling stone bridges. They might avoid that laborious climb, they might save time and energy by going straight across the river-bed, over which they could now pass dry-shod; yet not one of them ever does. The thing has never been done, they will tell you; men have always crossed by the bridges, and it is not good to depart from the ways of one's ancestors.

So it is with the man who persists in doing his chipping, caulking, riveting, drilling, reaming or wood-boring in the old old way—by hand—when with pneumatic or electric tools, three-fourths of the energy and the time would be saved, the cost reduced, and the work done better.

*You* may be doing some work by an out-of-date, painful method that could be done with pneumatic or electric tools at a saving of time that would surprise you. *You* may still be crossing a Chinese bridge long after the river has run dry.

Read our bulletins and our magazine “Ideal Power” and cross the river by the shortest route.

Peruse the Bulletin Directory on another page of this issue

## Chicago Pneumatic Tool Co.

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# IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances  
By THE IDEAL POWER PUBLISHING COMPANY  
Fisher Building Chicago

Vol. 10.

FEBRUARY, 1914.

No. 11.

## Three Wire Installation at the Cleveland Plant of the Chicago Pneumatic Tool Co.

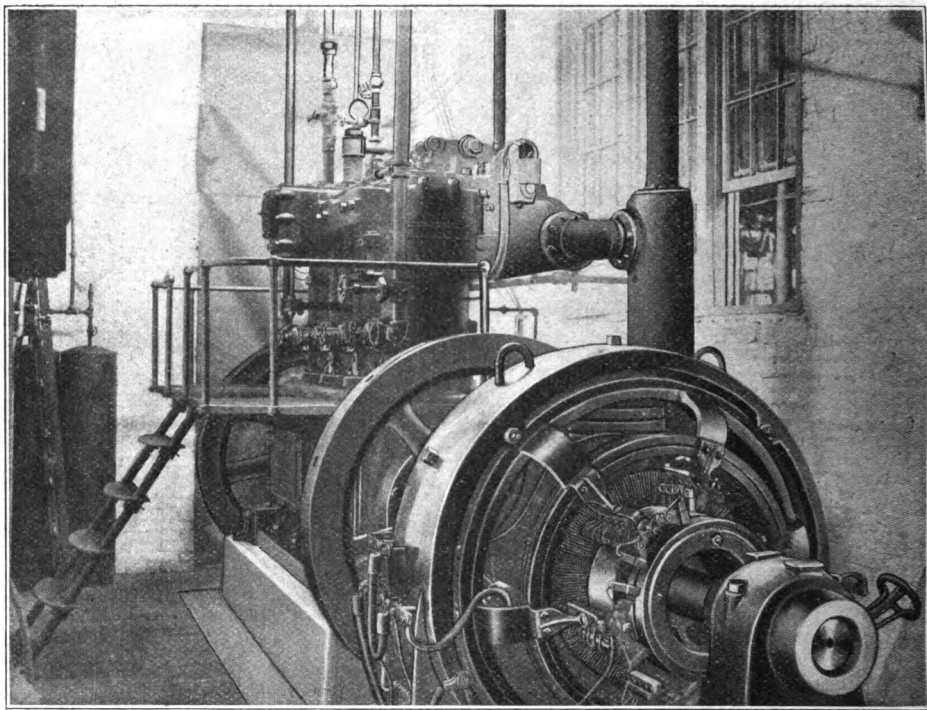
By J. O. MERWIN

The Cleveland Plant of the Chicago Pneumatic Tool Company has recently had to increase the capacity of its power plant to keep up with increased demands for the products manufactured there, and, in accordance with their usual progressive policy, they have installed a Burke 3-wire, 75 kw. direct current generator, directly coupled to and driven by a Bruce-MacBeth 115 hp. 4-cylinder, 276 rpm. vertical type, natural gas engine. A cut of this generating unit is shown on the following page.

A 3-wire system of direct current distribution has manifest advantages over a 2-wire system, particularly in the case of factories, office buildings, hotels, etc., where large amounts of current have to be economically distributed for both lighting and motor service. With such a system current can be distributed at 220 volts, which means a big saving in the size and cost of wires used, as compared with a 110 volt, 2-wire system, and yet at any point 110 volts is available for lights and small motors, while 220 volt is available for larger motors. The weight of the copper used in wiring a building for a 3-wire system is about one-third of that required for a 2-wire system. The fact that 110 volts, which is about as high a voltage as can be used

for Tungsten Filament lights, is always available for lights, is also a very desirable feature, as Tungsten Filament lamps give three times as much light for the same amount of current as carbon filament lamps. Carbon filament lamps are sometimes operated on 220-volt circuits, but this has not so far been practicable with Tungsten Filament lamps.

Thomas A. Edison, who first conceived the idea of using a 3-wire system, employed two separate 110 volt generators for supplying current to the two sides of the 3-wire system, but designers of electrical apparatus quickly realized that a single machine for supplying current would have the three-fold advantage of being cheaper to build, easier to operate on account of there being fewer parts to get out of order, and more efficient. Among the earlier types developed was one in which the distribution of current to the two sides of the 3-wire system was accomplished through transformers, or "balancing coils," as they are usually called, connected by collector rings to the windings of the armature. This type, in some form or other, is still used at the present day by most manufacturers. With some makes of this type, the "balancing coils" are placed in tanks, like an ordinary transformer

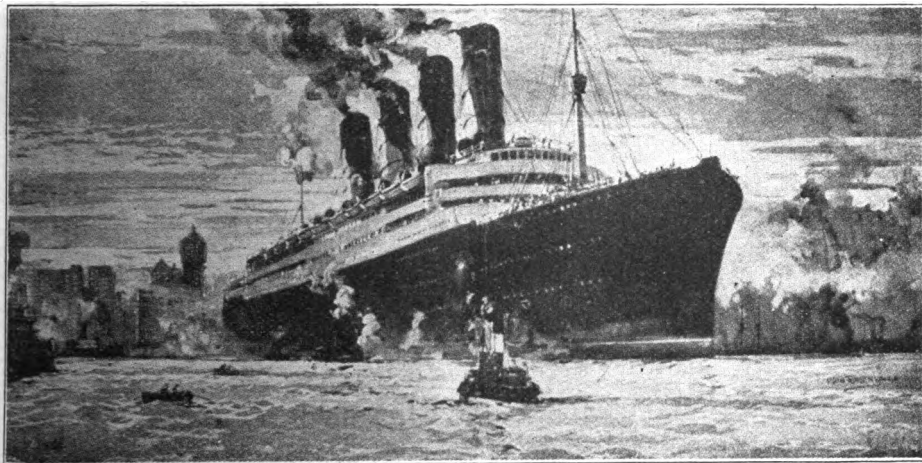


Burke 3-wire 75-k.w. direct current generator installed at the Cleveland plant of the Chicago Pneumatic Tool Co.

and have to be placed behind the switch-board or in some other more or less inconvenient place. With others, they are mounted somewhere on the armature shaft, usually on the end opposite to the commutator. All of the machines of the balancing coil type require more space than a 2-wire machine of the same capacity. Room must be provided somewhere for the balancing coils, and also for the collector rings, by means of which they are connected to the armature. These collector rings, frequently amounting to as high as four in number, are usually mounted on the armature shaft outside the commutator. Besides increasing the length of the machine these collector rings introduce the further objection of numerous additional brushes with their attendant troubles of sparking, etc. A further disadvantage of the "balancing coil" type of machine is that a certain proportion of the current generated is constantly wasted

in keeping the cores of the balancing coils magnetized, even when they are not performing any useful service.

It was only when the Burke Electric Company brought out its type of 3-wire generator that all of the above mentioned objections were eliminated, and a machine placed on the market which is comparable in reliability and simplicity of operation with a standard 2-wire generator. The results brought about by balancing coils in other types of 3-wire generator are accomplished in the Burke type by an ingenious arrangement of the armature windings, certain portions of which are connected to a single collector ring, mounted on the outer end of the commutator. No balancing coils or parts external to the machine are required, and the single collector ring takes up so little room that a Burke 3-wire generator requires no more space than a corresponding 2-wire machine of the same capacity. The loss of current



The Aquitania—The world's largest British-built steamer.

due to the magnetizing of the balancing coils is also eliminated by the peculiar armature winding, and, as should be the case, every portion of the field and armature windings is usefully employed in generating current.

It is a point of especial interest that the engineers of the Chicago Pneumatic Tool Company were among the first to recognize the merits of this type of 3-wire generator, and to help establish the present enviable reputation of Burke machines in the 3-wire field. Several years ago they had installed one of these machines at their Cleveland plant and one at their Detroit plant. The one shown above is the second one to be installed at the Cleveland plant.

#### Bad Walking.

An aged colored man, of the "Unc" Rasmus type, shambled into a shoe store in Thomasville, Ga., and asked for a pair of boots.

"What's the matter, uncle?" asked the clerk. "You never wore a pair of shoes in your life."

"No, sir," said the old darkey, scratching his woolly head; "dat Ah ain't. Ah ain't neber had no shoes on in mah life, but sense dis hear probishun done gone int' effeck, de woods is so full ub bottles dat a well-meanin' niggah kain't keep from manglin' his feet."

#### The Aquitania, the Latest Cunarder— The World's Largest British-Built Steamer.

According to reports from Liverpool by the New York agents of the Cunard line, the new Aquitania is approaching completion and will leave the shipyard at Clydebank early in the year and proceed to the Mersey, near Liverpool, to be fitted out for service. The Aquitania's dimensions are: 901 feet length, 97 feet beam and 92 feet 6 inches depth, hold to boat deck. The new ship is of 47,000 gross tonnage. She will be driven by four turbine engines of 60,000 horse power, which are guaranteed by the builders to give her an average speed of 23 knots an hour. These turbines have a total weight of 1,400 tons, and to enable them to be lowered into the hull of the ship one of the four great funnels has not yet been placed in position.

There are more than a million turbine blades, the combined length of which is more than 140 miles. The blades vary in length from one and a half to twenty inches.

These turbines are absolutely the latest production of marine engineering. Thousands of pounds have been spent in experimenting and full use has been made of the great experience gained by the Cunard company in the construction and running of their other turbine ships, the



Carmania, the Lusitania and the Mauretania.

Some idea of her immense size may be obtained from the following: Eight million nuts have been used in the construction of the Aquitania, and the total area of the nine decks is about 630,000 square yards. The steel plating used in the ship's construction, if placed on the ground would cover an area of a quarter of a mile square; while the lifeboats, if placed end to end, would stretch for half a mile. Fleet street could be hidden beneath the main deck, and at least ten railway trucks could be placed abreast upon the main deck. Twenty-five tons of grease and tallow were used in preparing the ways for the launching.

In the construction of the Aquitania fullest use was made of the pneumatic tool, a large number of Little Giant drills and Boyer and Keller hammers for riveting, caulking, etc., being employed.

She will be able to land her passengers in New York regularly on Fridays and Liverpool on Tuesdays. The Aquitania will have accommodations for 3,250 passengers of all classes. There will be eight decks. Provision will be made for 800 first class passengers. One of the features of the upper promenade deck will be space raised a foot above the level of the deck about twelve feet from the rail so that passengers will be able to rest in their chairs without being bumped by promenaders, who will have a clear room for walking. The Aquitania will be equipped with the anti-rolling tanks which have proved to be a success in the Laconia. With regard to safety it is said that she will have every modern appliance to make her a huge lifeboat. The Aquitania, it is expected, will enter the Atlantic service from Liverpool on June 20 next, and sail from New York on Wednesday, July 1. In order to accommodate the Aquitania the Cunard piers at the foot of West Fourteenth street, New York, which are 825 feet long, will be extended 100 feet.

The Aquitania is exceeded in size by one other ship, the German liner Imperator, which has a gross tonnage of 50,000 and a passenger capacity of 3,990. The

Mauretania of the Cunard line, the finest boat in that service and the fastest Atlantic liner, has a gross tonnage of 32,500, a passenger capacity of 2,165, engines of 68,000 horsepower, and a speed of 25 knots. The Aquitania, although 112 feet longer than the Mauretania, will be three feet shorter than the German boat.

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#### Chicago Pneumatic Tools Used in Construction of Harlem River Tunnel.

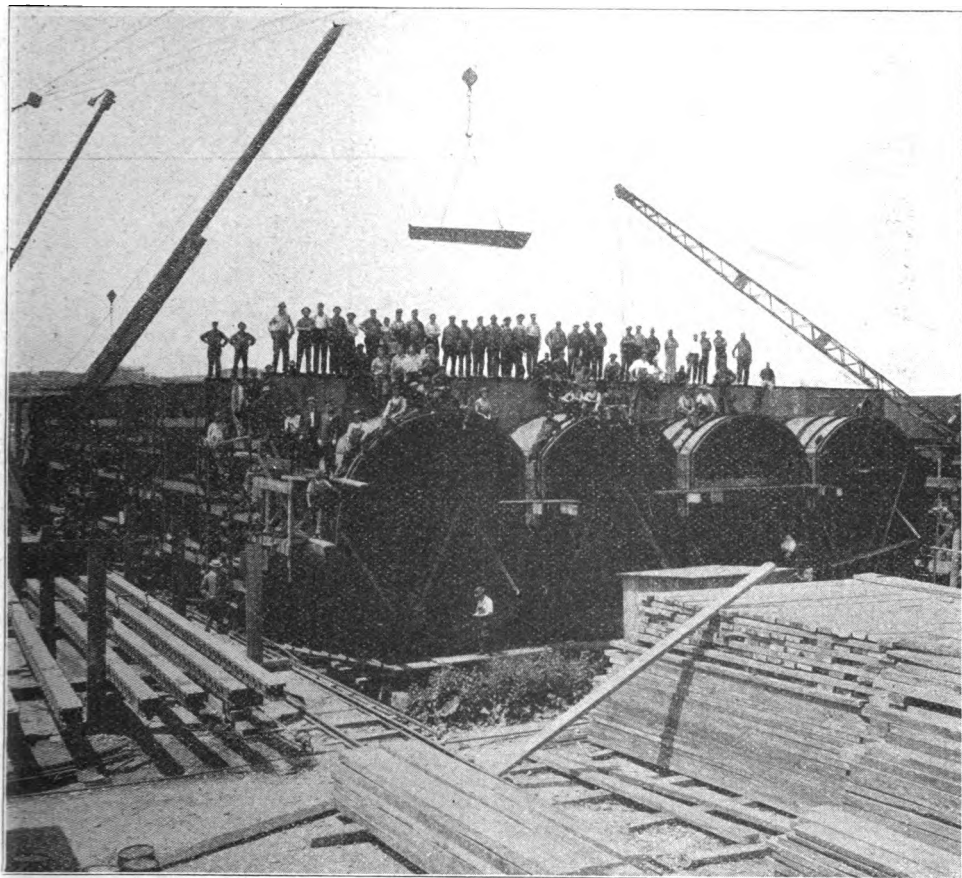
The Harlem River Tunnel, a portion of the new Lexington avenue subway, now under construction in New York, is being built by a method not heretofore seen in subaqueous tunnelling in New York. This method, which was first employed in building the Michigan Central R. R. tunnel upder the Detroit river from Windsor, Canada, to Detroit, Mich., is known as the Detroit River or Hoff method from the inventor and patentee, Mr. Olaf Hoff, consulting engineer, 149 Broadway, New York.

A trench is dredged in the river three feet three inches below the required grade of the tubes, and into this trench is lowered four (4) parallel steel tubes held together by steel diaphragms. By the tremie process the tubes are imbedded in concrete from the bottom of the trench up to three feet three inches above top of tubes. The tubes are then pumped out and lined with concrete.

The placing of the steel tubes in the trench is carried out in sections, each section being 220 feet long and five (5) sections are required to cross the river. The sections are provided with temporary bulkheads at each end of each tube, enabling them to be floated into position over the trench.

The sinking is manipulated by allowing the tubes to fill with water through 12-inch valves in the temporary bulkheads.

By admitting a little water into four (4) air cylinders or pontoons attached to the section, and with a buoyancy somewhat in excess of the weight of the section in water, this mass weighing about 800 tons is gently lowered into the trench, where two diaphragms find



The four steel tubes used in the Hoff method of building the Harlem River Tunnel.

temporary rest on a few pile bents previously prepared at the proper elevation.

As soon as a section has been sunk, it is imbedded in concrete in sections or pockets formed by the above mentioned diaphragms, 15 feet 7 inches apart, and wooden forms attached to the vertical sides of these diaphragms, which extend three feet beyond the outside tubes.

The assembling of these tubes, which embodied the erection of about 3,000 tons of  $\frac{3}{8}$ -inch plates and angles, the driving of 400,000 field rivets, and 50,000 lineal feet of caulking, was commenced June 2, 1913, and finished January 3, 1914, at 152 street and Harlem river.

One Chicago Pneumatic Tool Company Compressor, with a listed capacity

of 450 cubic feet of free air per minute, furnished air at 100 pound pressure for a maximum of 11 No. 80 Boyer Riveting Hammers, eight (8) Boyer Caulking Hammers, and two (2) No. 2 Little Giant Reamers.

The contractors for the Harlem river tunnel are Arthur McMullen & Hoff Company, 149 Broadway, New York City.

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"What's the matter, little boy?"

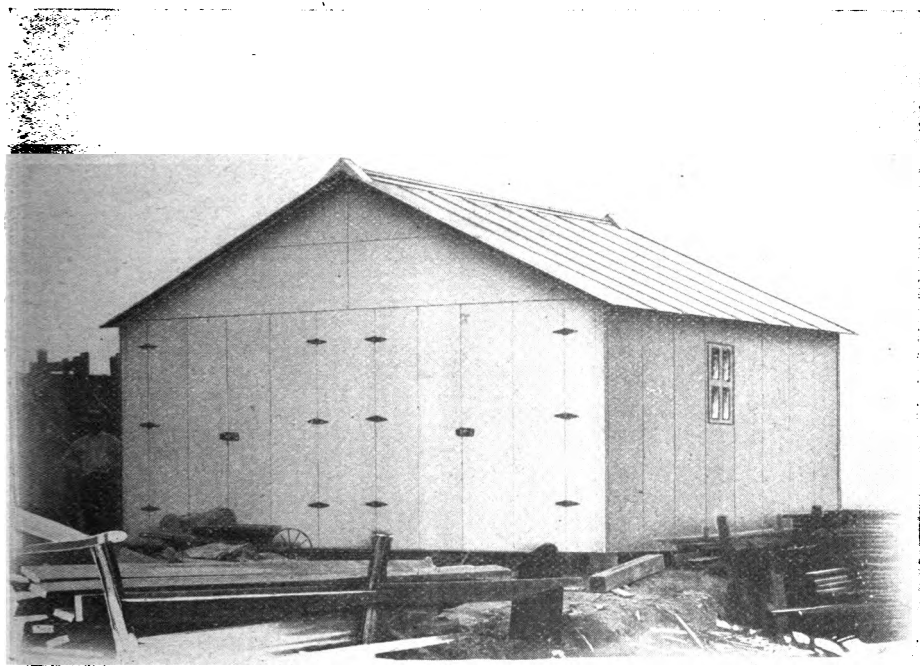
"M—maw's gone an' drowned all the kittens."

"Dear, dear! Now that's too bad."

"Yep, an' she p—promised—boo hoo—that I cud do it."



oyers Hammers used for calking lead joints on gas mains for the Public Service Corporation of New Jersey, Newark, N. J. The compressor—a portable "Chicago Pneumatic" gasoline engine driven—is shown at the left.



Ruby Contractors' Building, 19 ft. x 21 ft. 4 in.

### The Ruby Portable All Steel House.

The axe of husbandry as it hewed the wood for early settlers is nothing now but a memory. Wood once was the chief construction for the housing and transportation of man.

Time was when the modern sky-scraper of a score of years gone by was made of wood and supported by wooden timbers. The ships of Columbus, down to the merchantmen and war vessels of '61 were wooden—the railway trains of yesterday were wooden.

Today! It's steel.

Steel everywhere, for every purpose. Wood is becoming obsolete. It will be entirely *passé* wherever it enters into consideration for the economy and safety of mankind. For any and every building purpose that wood was used, steel has supplanted it—and for that building purpose, Ruby All-Steel construction serves best.

All-steel portable buildings are a comparatively new idea. Many influences tended to their creation. Steel buildings, at first, like everything else, went through an experimental stage. There were vital

points to be decided, some objections to be overcome, mechanical perfectness to be achieved. Ruby all-steel sectional and portable buildings, in principle, were designed along scientific lines, as created, with minor refinements, they are made today.

They have stood the gruelling test of weather and critical inspection for five years. The first Ruby building ever erected stands as solid in 1914 as it did in 1909.

The highest grade of metal—both in galvanizing and rolled angles—has always been used. Milled according to special specifications, it has been made for the specific purpose of giving the fullest satisfaction.

Primarily, the Ruby all-steel sectional and portable building was used for garages.

But the construction itself lent every reason for various usages. Being built in units, on an independent all-steel framework, Ruby all-steel sectional and portable buildings can be had in any size up to and including 26 feet in width—and any length desired. There are no posts, ground supports of any kind, except those used in



A Little Giant Truck in the U. S. mail service, Scranton, Pa.

the frame. The entire interior is free from all obstruction.

The advantages of steel over wood are many, and quickly apparent, not alone from the essential fire-proof qualities, but general economy and durability.

In different localities, prices on wood, brick, or concrete construction vary. These can be determined in your own territory by securing estimates on various sizes of buildings in different construction for comparison with the Ruby.

In general, you will find that, size for size, Ruby Portable All-Steel is less expensive in the first cost than any other construction.

This thought suggests itself—steel does not deteriorate. It always maintains its fire-proof and indestructible qualities. The same general selling points on garages may be more or less applied to buildings for other purposes.

Many railroads have also adopted the Ruby steel building, using it for various purposes, such as hand-car houses, tool houses, bunk houses, and storehouses.

In conclusion, it will be found to be a fact, unlike any other building being manufactured, the Ruby "Veribest" Portable All-Steel Building will not decrease in value by its being removed from one location to another.

The Chicago Pneumatic Tool Co. are general sales agents. Write to them for prices and information.

### Only Papa.

Robbie ran into the sewing room and cried: "Oh, mamma. There's a man in the nursery kissing Fraulein."

Mamma dropped her sewing and made a rush for the stairway.

"April fool," cried Robbie, gleefully, "it's only papa."

Her Friend—I suppose now that you are married your husband doesn't bring you flowers any more.

Mrs. Youngbride—Oh, yes, he does. Only last night he brought home a cauliflower.



Another Little Giant in Scranton, Pa., doing service for the Scranton Bedding Co.

### A Prayer.

"Backward, turn backward, oh Time in thy flight, give us a girl whose skirts are not tight; give us a girl whose charms, many or few, are not exposed by too much peekaboo; give us a girl, no matter what age, who won't use the street for a vaudeville stage; give us a girl not too shapely in view; dress her in skirts that the sun can't shine through."

### O Ye Gods.

"Were you in Venice while you were abroad?"

"I forget. Were we, husband?"

"I don't see how you can forget Venice. That's where we got that good spaghetti."

### Explicit but Incriminating.

A Canadian lawyer tells this story:

A bailiff went out to levy on the contents of a house. The inventory began in the attic and ended in the cellar, when the dining room was reached, the tally of furniture ran thus:

"One dining room table, oak.

"One set chairs (six), oak.

"One sideboard, oak.

"Two bottles whisky, full."

Then the word "full" was stricken out and replaced by "empty," and the inventory went on in a hand that straggled and lurched diagonally across the page until it closed with:

"One revolving doormat."

### Money Talks.

At a certain banquet held in Chicago a young attorney was very desirous of getting the seat next to the senator, who was the principal speaker of the evening. Calling the waiter, he slipped him a half dollar and told him of his desire. But upon sitting down he found to his utter chagrin that he was at one end of the table and the senator at the other. When the waiter again came around he demanded to know why he was seated so far from the speaker. "Well, sah, the Senator gave me a dollar and tol' me to put you as far away from him as possible."

# IDEAL POWER

PUBLISHED MONTHLY  
In the Interest of Compressed Air  
and Electrical Appliances

BY THE

**IDEAL POWER PUBLISHING CO.**  
**1014 Fisher Building**  
**CHICAGO, U. S. A.**

C. I. HENRIKSON

Editor

Vol. 10. FEBRUARY, 1914. No. 11

## TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 50 cents per year

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Send 25 cents and have your name put on our  
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## This Number Has a Supplement.

A truck supplement to this number consisting of 32 pages devoted entirely to the subject of auto truck transportation will be mailed on receipt of request. Address card or letter to the editor.

## Shipbuilding in the United States in 1913.

Few people realize that at the present time the American merchant marine comprises a total of 7,886,518 tons, and that it is exceeded only by the merchant marine of Great Britain, which amounts to 18,696,237 tons. Germany is third in the list, with 5,082,061 tons. Unlike the British and German merchant fleets, however, practically all of the American merchant marine is engaged in the domestic trade, says International Marine Engineering.

There is much deserved criticism of the American government for doing nothing whatever to foster the building and operating of vessels in the foreign trade. The shipbuilding and ship operating business is about the only industry that not only has not received encouragement, but that has been hampered in

many ways by laws that are unreasonable and unjust. Every Congress for the last fifty years has made a more or less weak effort to further the interests of the merchant marine, but at no session has there been sufficient public sentiment or concerted action to accomplish anything.

As a result there are less than a dozen ships in the foreign trade flying the American flag, and all of these are from ten to twenty years or more old. Furthermore, it is a question whether six of these ships are not operated contrary to law, because the control of the vessel so far as ownership is concerned is in the hands of people who are not American citizens.

To get some idea of what the possibilities of the shipping and ship owning industry would be if the government would offer reasonable encouragement it is only necessary to see what has been done for the merchant marine in the domestic trade. Recent census reports show that the capital invested in shipyards within the borders of the United States represents practically \$150,000,000 (£30,800,000) and that in these yards about \$100,000,000 (£20,500,000) is spent annually in wages and for materials. The American merchant marine itself, in spite of its many handicaps, has expanded along the seacoasts and on the Great Lakes and other inland waterways until it represents a total investment of approximately \$600,000,000 (£123,000,000). The yearly payments for wages, salaries, etc., are about \$120,000,000 (£24,600,000) and repairs and renewals of vessels represent an expenditure of about \$30,000,000 (£6,150,000).

If to the total of the American merchant marine were added the 2,000,000 or more tons of vessels now in the foreign trade owned by Americans, but operating under the flags of other countries because of the handicap placed upon vessels in such trade when flying the American flag, the total American merchant marine would be increased by this amount, bringing it up to nearly 10,000,000 tons. Furthermore, there would be an increase in the amount of the capital in-

vested in shipping already quoted of about 33 per cent, with corresponding increase in wages, salaries, money spent for repairs, etc., to say nothing of the taxes that would be collected on this tonnage. As some of the vessels in question are in the passenger service and others in the freight service, a unit of \$75 (£15.4) per ton can be safely adopted as a valuation. This would represent \$150,000,000 (£30,800,000) of American money invested in ships at the present time flying foreign flags, and yet not benefiting the American government to the extent of one penny so far as taxes, etc., are concerned.

### The Leading Shipbuilders.

With the foregoing conditions in mind, it is of interest to examine the records furnished by the American shipyards, showing the amount of shipbuilding which has been carried out during the past year. While the following figures are by no means complete, since many of the smaller shipyards have failed to furnish the necessary data required to make such a record complete, nevertheless the returns from the largest and most important shipyards in the country are complete and give a good idea of the extent of shipbuilding at the present time.

In Table I are given figures showing the number, gross tonnage and indicated horsepower of the merchant vessels built during the year by sixteen of the leading shipyards, while in Table II are given

Ellicott Machine Corporation .....	7	4,000	.....
Union Iron Works .....	5	3,766	2,656
Manitowoc Shipbuilding and Dry Dock Company .....	6	2,778	1,150
Seattle Construction and Dry Dock Company .....	4	2,642	8,070
Staten Island Shipbuilding Company .....	6	2,640	4,250
United Engineering Works .....	4	1,870	5,485
Bath Iron Works .....	1	306	275

TABLE II.—NAVAL CONSTRUCTION.

	No.	Tons displacement.	I.H.P.
Newport News Shipbuilding and Dry Dock Company ..	2	38,160	13,400
Maryland Steel Company ..	1	19,250	7,000
Mare Island Navy Yard ..	1	19,230	6,300
Bath Iron Works .....	2	2,040	32,000
Wm. Cramp & Sons' Ship and Engine Building Company .....	2	2,020	32,000
Seattle Construction and Dry Dock Company .....	1	1,838	1,600
Fore River Shipbuilding Corporation .....	1	1,010	16,000

en the number, displacement tonnage and indicated horsepower of naval vessels completed during the year 1913. From these tables it is evident that the Newport News Shipbuilding and Dry Dock Company, Newport News, Va., produced the greatest volume of tonnage during the year, although the American Shipbuilding Company, comprising several yards on the Great Lakes, produced the greatest amount of merchant tonnage.

### Shipbuilding Work at Navy Yards.

In addition to the naval work in progress and under contract at the private shipbuilding establishments, two of the navy yards—the one at New York and the one at Mare Island, which are the only navy yards equipped for shipbuilding—are engaged with work to their maximum capacity. In fact, there is now a greater volume of new shipbuilding work in progress and authorized at these navy yards than ever before in the history of the new navy. At the New York yard the battleships New York and No. 30 are under construction, and at the Mare Island yard the river gunboats Monocacy and Palos and the fuel ships Kanawha and Maumee are under construction, while the electrically-propelled collier Jupiter has only just been completed.

TABLE I.—MERCHANT CONSTRUCTION.

	No.	Gross tons.	I.H.P.
American Shipbuilding Company .....	16	57,769	31,740
Newport News Shipbuilding and Dry Dock Company ..	7	35,873	22,550
New York Shipbuilding Company .....	15	35,204	20,300
Maryland Steel Company ..	7	25,793	17,000
Wm. Cramp & Sons Ship and Engine Building Company .....	4	22,800	11,400
Harlan & Hollingsworth Corporation .....	9	13,747	14,760
American Car & Foundry Corporation .....	17	10,400	.....
Fore River Shipbuilding Corporation .....	9	10,315	6,150
Great Lakes Engineering Works .....	12	9,888	7,260



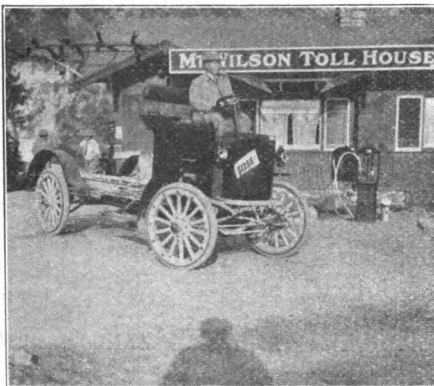
## The Little Giant as a Mountain Climber

An Account of Trip to Summit of Mt. Wilson by H. L. Miller,  
Pacific Coast Distributor.

In order to succeed in Southern California, a motor truck must be able to climb with ease the various hills and mountains with which this country abounds. The Little Giant has been subjected to several unusual tests which have emphasized its ability as a hill climber.

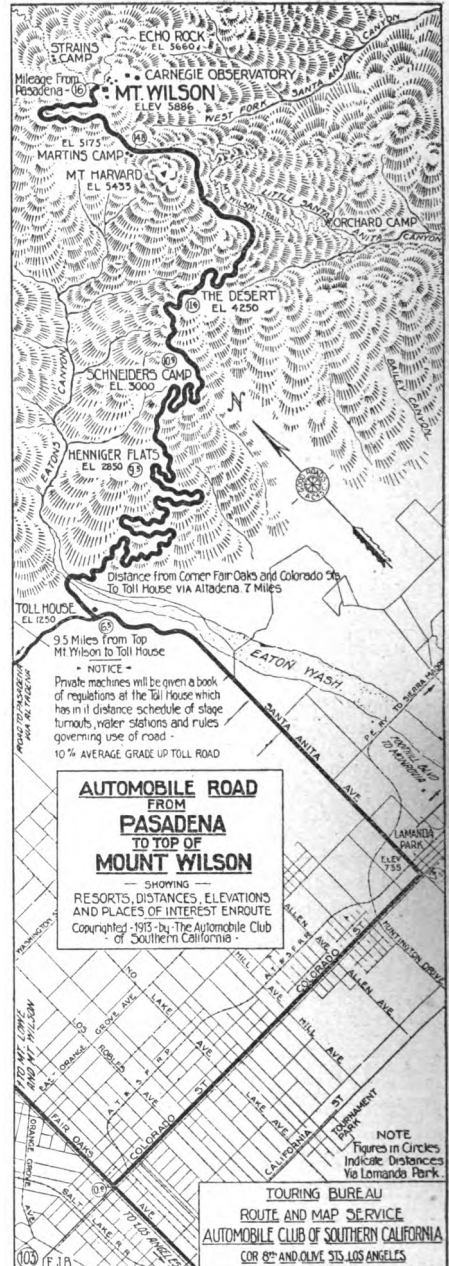
In 1911 Mr. Geo. Henderson took a Model "B" Little Giant Truck to San Bernardino at which point it was loaded with 2280 pounds of cement and driven over Strawberry Peak to an altitude of 7,000 feet. By the people of this place it was considered wonderful.

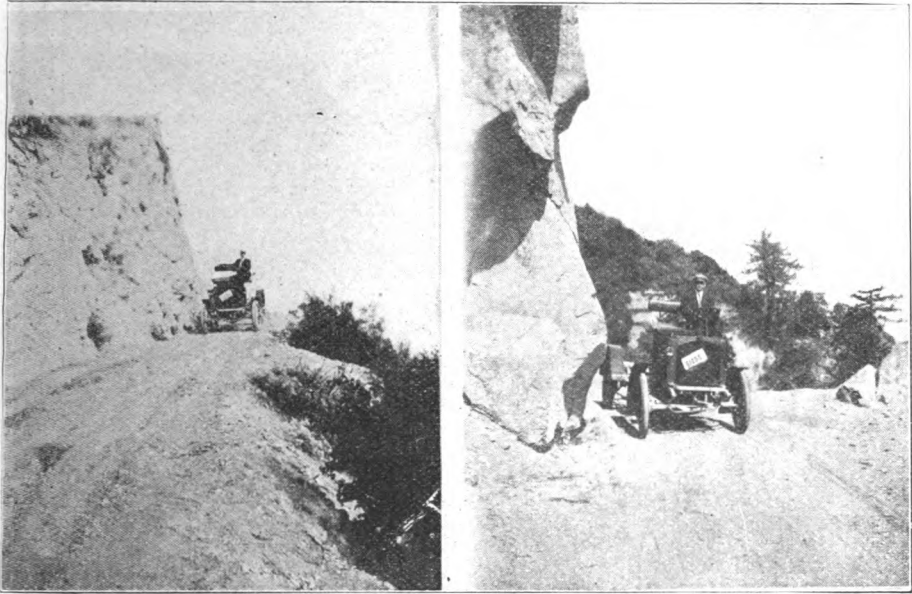
In August 1912, Mr. H. L. Miller, Pacific Coast distributor for the Little Giant took a Model "D" Little Giant truck to Camp Baldy to an altitude of 4,712 feet rising from the valley to this height in a distance of 7 miles. This was the first time that a one-ton truck with standard equipment ever attempted this task.



Toll house, the entrance to the private road.  
Taken at 9:45 a. m., Oct. 5th, 1913. Mr.  
Miller at the Wheel of 4-cyl. Model H.

On Oct. 5th, 1913, at 9:45 a. m., Mr. Miller in company with Mr. Geo. Campbell, foreman of the Little Giant service garage as driver, started up the Mt. Wil-

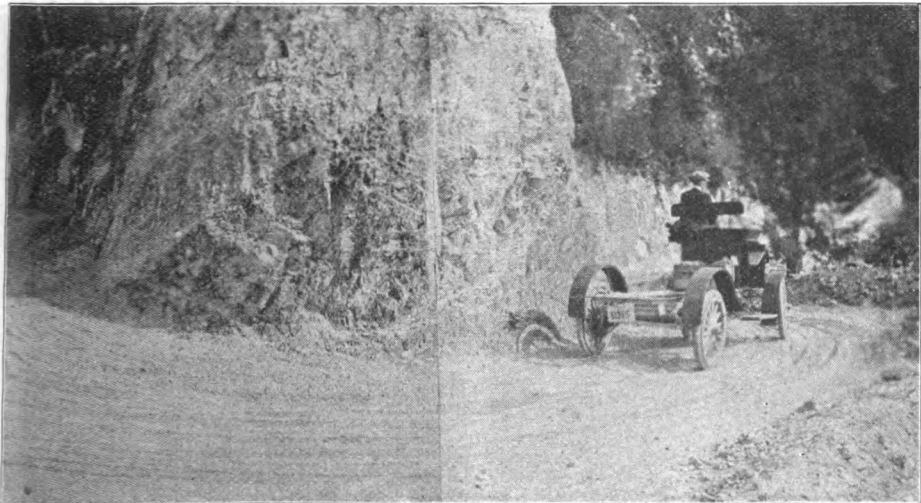




Showing (at left) 60-foot cut from a 75% profile on a 20% grade, and (at right) one of the 40 turnouts blasted out of granite. It is at these places only that you can pass any kind of a vehicle. At all other points there is only from one to two feet extra space.

son grade and covered the  $9\frac{1}{2}$  miles in 1 hour 35 minutes, rising to 5,886 feet. It was predicted that they would never get to the top. However, the trip was made very successfully with a 10 minute

stop for inspection and the entire mechanical equipment was as cool as under ordinary use. At no time did the water boil. This demonstration is as severe as can be had on Southern California roads.



Showing one of the 50 abrupt turns blasted out of the solid granite. The radius of this turn is about 17 feet. In making the turns it is necessary to back in order to avoid the high banks, which in some places are 2,000 feet high.



Showing touring car that went over the grade two days later, when brakes failed to work. Rolled down in canyon 600 feet and was hoisted to road by a wrecking company at an expense of \$400.00.

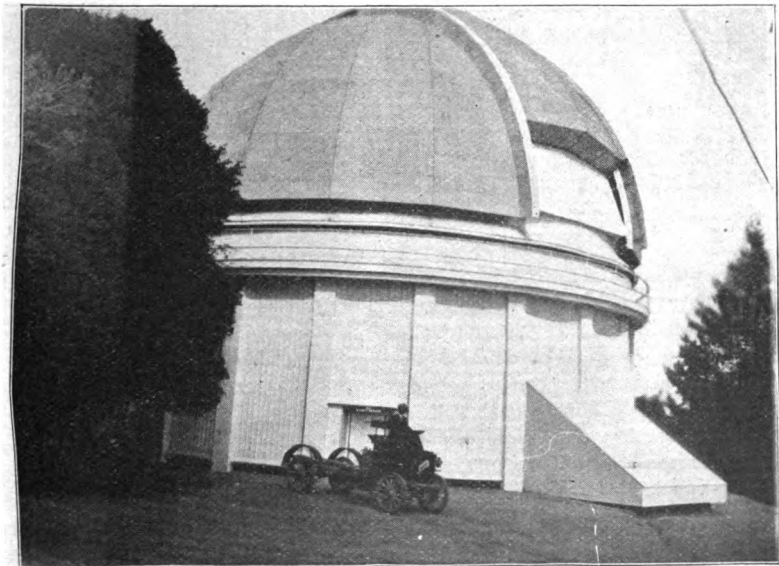


L. G. Truck Model "H" at the top of Mt. Wilson, with the Astronomical towers in the rear.

The Mt. Wilson Trail is  $9\frac{1}{2}$  miles long. Grade averages 10%; maximum, 20%. It was built by Andrew Carnegie, at an expense of \$100,000, or over \$10,000 per mile. This road was built for the express purpose of transporting a 100-inch lens which took ten years to perfect. Mr. Carnegie is spending hundreds of thousands of dollars in astronomical research at Mt. Wilson. The Little Giant made seventy-five per cent of the journey on the intermediate, twelve and one-half per cent on the low, and twelve and one-half per cent on the high. Gasoline consumption, 4 gallons, 1 quart. Lubricating oil,  $1\frac{1}{2}$  pints.



150-foot tower built over a 70-foot shaft, with instruments for photographing the heavens.



Housing for 60-inch lens. L. G. Truck in foreground. Altitude, 5,886 feet.



A Little Giant in London. English merchants so keenly appreciate the advertising value of the auto truck that many of the cars on the streets of London, particularly in wholesale business, carry signs and lettering advertising the business of the retail merchants.

### Brief History of the Motor Car.

An interesting description of early types of motor cars, and the industry's development from the seventeenth century, has been written by Walter H. Whiteside, president of the Stevens-Duryea Co. An abstract of the article follows:

The first experiments with "horseless carriages" that met with any degree of success were made in the seventeenth century, when Johann Haustach of Nuremberg constructed a carriage propelled by springs. There was no steering device, but the car would travel in a straight line when wound up. During the same period vehicles to which sails were attached were used in Holland. In 1619 another spring-driven carriage referred to in the patent paper as a "cart without horses," was patented in England, and in 1644 a French patent was is-

sued on a four-wheel carriage propelled by foot-power. In 1748 a carriage driven by clockwork was exhibited before Louis XV of France. Several others experimented with spring drives up to the year 1800, but with little success.

Steam was first used in a road carriage in Peking, China, in the year 1630. History credits Father Verbiest, a missionary, with achieving this feat. This was followed in 1680 by Sir Isaac Newton's steam carriage. In 1769 a steam gun carriage was built in France. It had three wheels, was driven by a two-cylinder engine, and traveled three miles per hour when loaded with two and a half tons. In 1787 Oliver Evans of Maryland invented a steam road wagon, and Nathaniel Reed, in 1790, constructed a combined road wagon and boat at Pe-cousic, Mass. These two men were the first ones to build steam carriages in this country that would successfully propel



Another Little Giant doing business in Lond on.

themselves. The first steam carriage in which the crankshaft was geared to the driving wheel was invented by Richard Trevithick in England in 1802. In 1831 a steam-driven carriage was operated between Cheltenham and Gloucester, England. This carriage could run twelve miles an hour, but the service was discontinued after four months, owing to public opposition. Walter Hancock established a steam omnibus line in 1829. His was the first chain transmission vehicle invented. In 1836 five of these carriages were operated between Paddington and Stratford, and, in twelve weeks 12,760 passengers were carried. This line was practically forced out of business by the English government, because of a toll law with taxes so high that none could afford to run cars. This law arrested further development of the horseless carriage until its repeal in 1846.

In France in 1880 a steam carriage was built which, as late as 1895, ran 745 miles in 90 hours. In 1886 the first gasoline

engines were used on road vehicles. These were the invention of Carl Benz and Gottlieb Daimler of Germany. In 1889 a two-cylinder engine was invented by Daimler; Messrs. Panhard and Levasor of Paris immediately acquired the patents and built around the engine the first gasoline motor car. The Panhard car was quickly followed by the Renault Freres and the Benz. To J. Frank Duryea belongs the distinction of being the first American to turn out a successful motor-driven vehicle. The first car was completed at Springfield, Mass., in 1891, and was equipped with a one-cylinder motor. In 1894 a vehicle propelled by a two-cylinder engine was built.

#### The Effect of Washing.

"I won't wash my face!" said Dolly, defiantly.

"Naughty, naughty," reproved grandmother. "When I was a little girl I always washed my face."

"Yes, and now look at it!"



### A Curious Mistake in Figuring.

The necessity of accuracy in minor details is strongly illustrated by a case decided in a New York court last week. The Thomas J. Buckley Engineering Company, which has done much work in subway building in New York City, brought suit to prevent the Public Service Commission from executing the Seventh avenue subway contract in favor of the Degnon Construction Company, on the ground that a clerk in transcribing the company's estimate for its bid made two mistakes, which caused a difference of \$216,112 in the bid.

If the clerk had transcribed the figures correctly the Buckley company would have named an amount \$53,000 lower than the Degnon Company, to which the contract was awarded. It was shown to the court that the first error of the clerk consisted in inserting \$12 instead of 12 cents a pound for special wire forms, and the second was in inserting \$45 instead of 45 cents a linear foot for galvanized iron pipe hand rails.

The court made the common sense decision that no relief could be given, being of the opinion that the granting of the application might establish a precedent which would enable a bidder on a future contract for public work to deliberately specify what would seem unusually large prices for certain items with the idea that, if with those items he turned out to be the lowest bidder, he would take the contract, while if he was the second lowest bidder he would claim that a mistake had been made and demand the right to so correct his bid to make him the lowest bidder.

The errors made, as set forth in the suit, are of a character that would seem to one in the iron trade as almost impossible of commission. They are so egregiously incorrect, however, that perhaps that may be the reason why they were not observed by the higher officials of the company preparing the bids.—The Iron Age.

### A Gem from Ruskin.

All works of quality must bear a price in proportion to the skill, time, expense and risk attending their invention and manufacture. Those things called dear are, when justly estimated, the cheapest. They are attended with much less profit to the artist than those which everybody calls cheap. A disposition for cheapness and not for excellence of workmanship is the most frequent and certain cause of the decay and destruction of arts and manufactures.

### But He Got Her.

"Colonel," asked the beautiful girl, "when was the most trying moment of your life?"

"It was when I went to my wife's father for the purpose of asking him to let me have her. He was very deaf and I had to explain the matter before all his clerks."

The man who does not count the cost is apt to feel cheap sooner or later.

### A New-Fangled Mule.

Secretary MacVeagh at a dinner in Washington was urging the need of scientific laws.

"But let us make these laws scientifically," he said. "We must let in the light. We must work in the light. If we work in the dark, you know we will go wrong—like young Cornelius Husk.

"Cornelius Husk was called one winter morning before dawn and told to go and harness the mule to the dearborn.

"The lad was too busy to light a lantern, and in the dark he didn't notice that one of the cows was in the stable with the mule.

"As he tried to harness the cow his father, impatient at the long delay, shouted from the house:

"'Corney, Corney. What are ye doin'?"

"'I can't get the collar over the mule's head,' the boy replied. 'His ears are frozen.'"



Not all men of single ideas are bachelors.

Generating hot air is easier than getting up steam.

It is better to be on pleasure bent than on duty broke.

Some people's only aim in life seems to be to throw mud.

A smart woman can learn things from a man that he doesn't even know.

One can lead a double life on a single salary, but it is a lot of trouble.

A multitude of sins show through the charity that is supposed to cover them.

Wisdom of the man who knows it all is valuable, but so is the hole in a doughnut.

Some people would cry over spilled milk even if they don't like milk in any form.

A reformer never believes in himself as much as he wants others to believe in him.

Some men try to hide their light under a bushel, while some others make a fireworks display.

If we were permitted to choose our neighbors they would probably turn out just as unsatisfactory.

Marriage generates serious thought—afterward.

Stretch the truth and it will fly back and sting you.

Man has always had a tendency to go up in the air.

The one sure thing that comes to him who waits is old age.

Nothing brings out a man's enthusiasm like working on commission.

The puny child of poor parents would be delicate if they were rich.

True love may be a myth, but there are a lot of mighty satisfactory imitations.

It is human nature to expect a dealer to sell you two 15 cent articles for a quarter.

It sometimes happens that the spinster who says she's "glad of it" is able to make everybody believe it but herself.

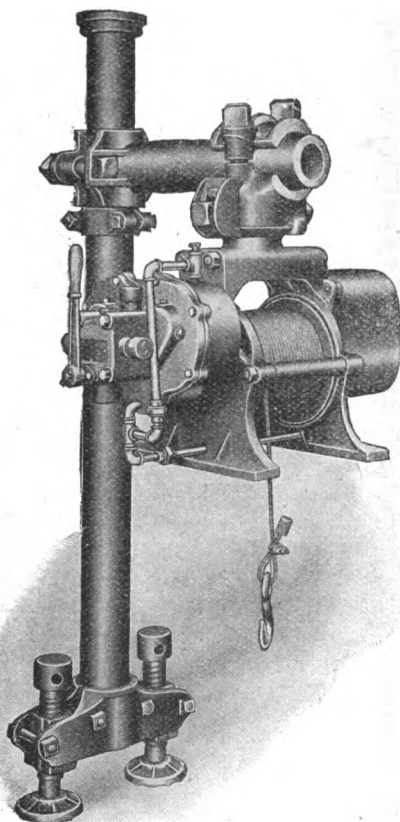
A meddlesome woman is bad enough, but when the meddling bee gets into a man's bonnet it is time to stand from under.

It has been said that women never love as deeply as men—probably because there is so little to furnish the inspiration.



# Chicago Portable Mine Hoist

An Air Hoist that is indispensable underground.



CHICAGO MINE HOIST  
Clamped to Double Screw Column.

The CHICAGO PORTABLE MINE HOIST solves the question of how to raise and lower timber and rock economically and quickly in Raises, Winzes and Stopes, and is indispensable in an efficiently managed mine because of the ease with which it can be set up or torn down and transported from point to point, the great tonnage it will handle, doing it in a tenth of the time required by hand labor, and the consequent large saving in labor cost effected by its use.

The CHICAGO PORTABLE MINE HOIST will coil 200 feet of  $\frac{5}{16}$ " wire rope and hoist 650 pounds at a rope speed of 90 feet per minute, and is guaranteed to do this with 80 pounds air pressure.

Write us for Bulletin 149, which tells all about this Hoist, its construction, uses, etc.

## CHICAGO PNEUMATIC TOOL COMPANY

1014 FISHER BUILDING  
CHICAGO

50, CHURCH STREET  
NEW YORK

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# IDEAL POWER

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No. 12.

## Keeping Your Railroad Shop at Your Elbow

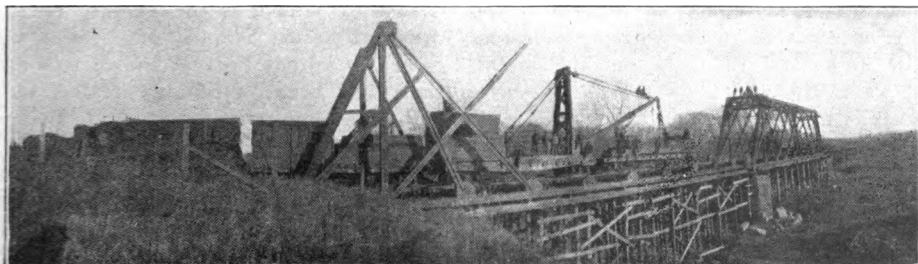
The advantages of the railway repair car fitted up with a compressed air power plant will be apparent to every engineer who is interested in railway bridge or construction work, far from the base of supplies.

The idea of fitting up a car as a repair shop, with all the conveniences and labor saving devices that compressed air offers, is not a new one, but up to the present time the power plant has consisted of nothing more compact or convenient than a steam driven compressor with a portable boiler or a power driven machine operated by belt from a portable steam engine. In either case the cumbersome boiler took a great deal of room and required a great deal of care and attention.

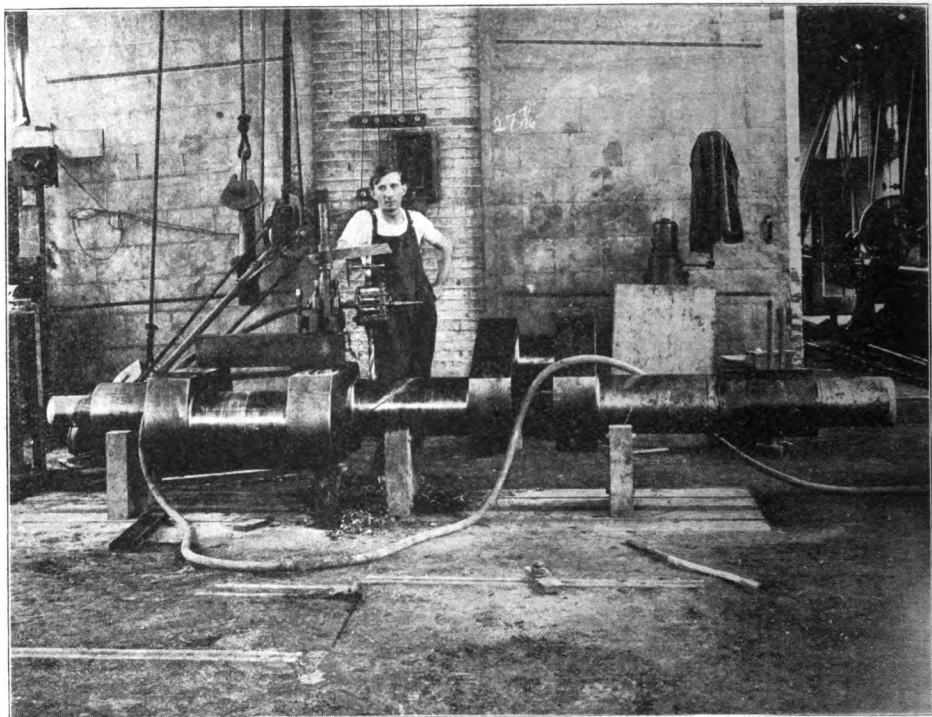
The "Chicago Pneumatic" gasoline engine driven compressor has added many new advantages to the compressed air power plant. It consists of a highly efficient gasoline engine direct connected to a "Chicago Pneumatic" air compressor, mounted either on skids or on a truck as shown on the back cover of this issue.

It is a simple compressor outfit, automatically regulated and needs no expert attendance. It is moderate in first cost and economical in gasoline consumption. No cartage of wood, coal or ashes; no electricity or other source of power supply.

The railroads of the country are manifesting a great deal of interest in this new type of compressor.



Erecting a Railroad Bridge in Minnesota. In the Repair Car is a "Chicago Pneumatic" Gasoline Air Compressor supplying air for the Boyer Guns on the job.



Little Giant Drill in use on broken crank shaft. Drilling holes to assist in work of the cutting torch.

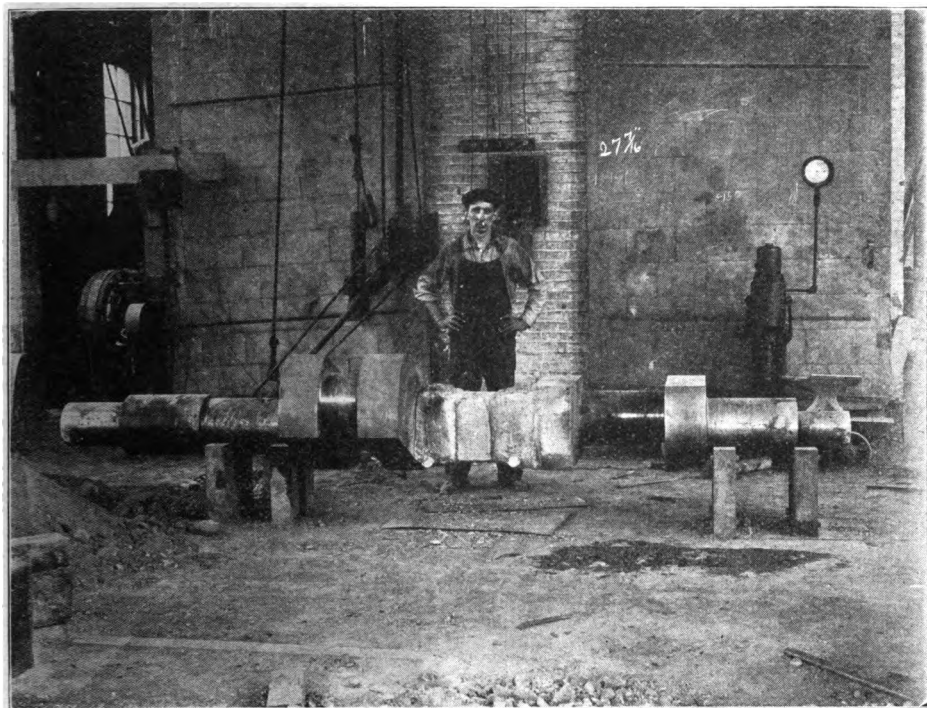
### Little Giant Drill Proves Useful in Thermit Welding Process.

This is a 12-inch shaft for a refrigerating machine operating in the plant of the Ice Manufacturing Company of New York City and which broke as shown on the photograph. It was necessary to cut out the broken bearing entirely and weld in a block of steel by means of two Thermit welds. This was then turned down in a lathe and the shaft was ready for service. A Little Giant drill was used in cutting out the bearing. It was found necessary to drill a few holes and then cut out the metal between the holes by means of oxy-acetylene. The cutting torch was not sufficiently powerful to cut the entire bearing without drilling the holes first.

The Goldschmidt Thermit Co. are called upon to weld a great many heavy crank shafts particularly for refrigerating machines and these repairs have

been uniformly successful. Their experience has shown that the shafts usually break originally due to some flaw in the material, and while they should have a factor of safety of 5 if properly designed, they have no factor of safety at all if the flaw is present. By making the weld and eliminating the flaw, they claim a better shaft than the original is obtained as a welded shaft will still have a factor of safety of at least 4 after all the excess metal, which is fused around it in the welding operation, has been machined off. These repairs always pay because the rest of the shaft has been thoroughly tested, and with the flaw eliminated, will always give good service.

In making these welds, they leave a space of about one and one-half inches between the sections to be welded together and then shape up a collar of wax around the parts to be welded of

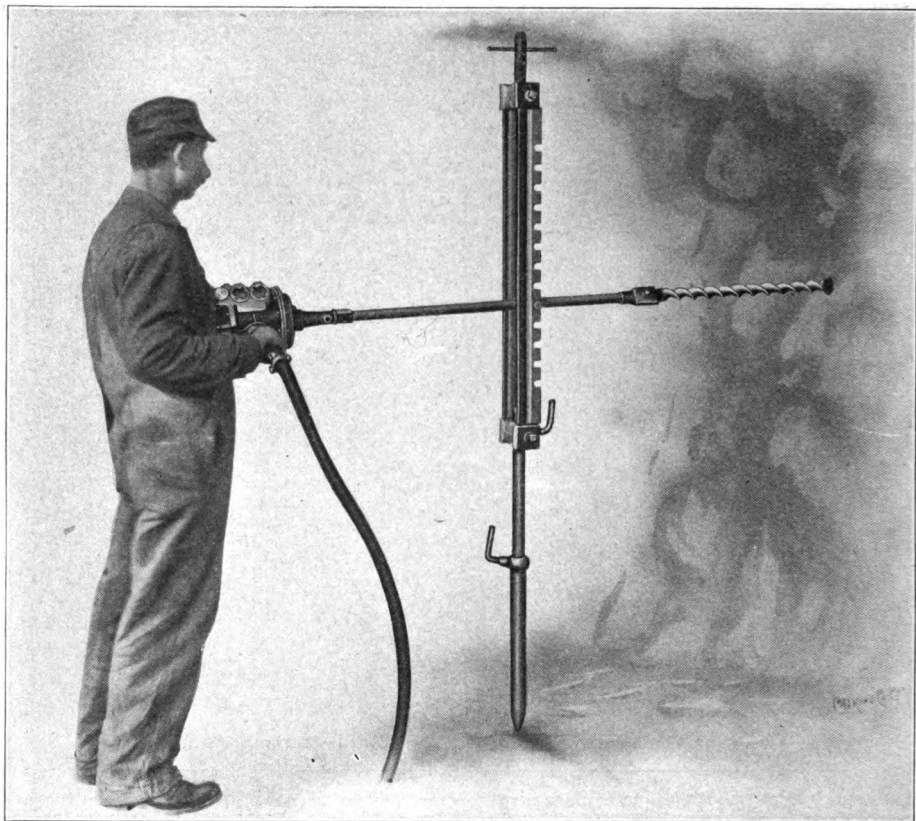


Crank Shaft after the Thermit Weld and before machining.

the exact shape of the reinforcement of Thermit steel which is to be welded on. A sand mold is then rammed against this using wooden patterns for the pouring gate and small preheating gate at the bottom and the large riser over the top. The flame of a compressed air gasoline preheating torch is then directed into the preheating gate burning out the wax and bringing the sections to a red heat. In the meantime a crucible containing a charge of Thermit is suspended over the pouring gate. As soon as the sections are red hot the torch is withdrawn, the heating gate is closed with a sand core, backed up with sand and the Thermit charge in the crucible ignited. This reacts and produces half its weight in liquid steel at 5,400 degrees F., which is tapped into the mold, melting the sections with which it comes in contact, and amalgamating with them to form a single homogeneous mass when cool. The shaft is then machined and is ready for service.

#### Not a Bad One.

A Scotchman had met with an accident, by which his breast-bone had been forced inward to such an extent that his breathing was impeded, and his death in consequence quite imminent. Nothing could be done for him, and he was told so. Just at that moment an itinerant Highlander commenced to play the bagpipes in the street below. The patient begged, as a dying request, that the player might be brought up to his bedside, that the last sound in his ears should be the pibroch of his clan. The doctors consenting, the minstrel was brought into the ward, and blew for all he was worth, the pipes skirling and screaming. The dying man gave such a tremendous sigh that the effort expanded his chest, putting the breastbone back to its normal state. Doctors and nurses were all delighted, and congratulated the man on his marvellous recovery. They then turned to the other patients. They were all dead.



Showing how the No. 2 Chicago Coal Drill is operated on "all steel" frame. Get Bulletin 150.

### Multiplying the Coal Output.

The Chicago Coal Drill, using either compressed air or electricity, has positively solved the problem of how to bore both quickly and cheaply the shot holes necessary to break the coal after it is undercut. Not only will it bore the holes quickly and cheaply, but quicker and cheaper than can possibly be done by ten hand borers.

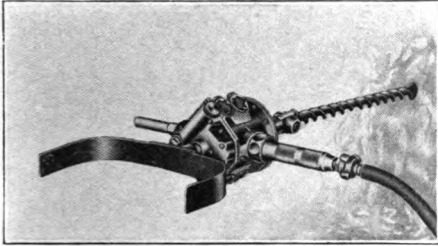
The Chicago Coal Drill may either be mounted on a drill frame or held by hand. Regardless of how it is operated or mounted, it will lower working costs and increase the tonnage of any mine because it will do more work in less time than can be done by hand.

The Chicago Coal Drill not only has all the simplicity of the primitive coal drill operated by hand but is very

much more efficient and doesn't weigh any more. Taking no longer to put the auger bit against the coal face than is required if boring by hand, it will bore a hole two inches in diameter and six feet deep in from one to three minutes, depending on the hardness of the coal.

In other words, the Chicago Coal Drill will bore as much in from one to three minutes as can be bored by hand in fifteen to thirty minutes. And it will do it without getting tired. Furthermore it will bore the hole in hard coal just as easily and quickly as in soft coal. What is more, not even slate or sulphur balls can seriously interfere with its operation. Not a hole need be lost.

On the opposite page is illustrated a No. 2 Chicago Coal Drill, operated with compressed air at from fifty to one hun-

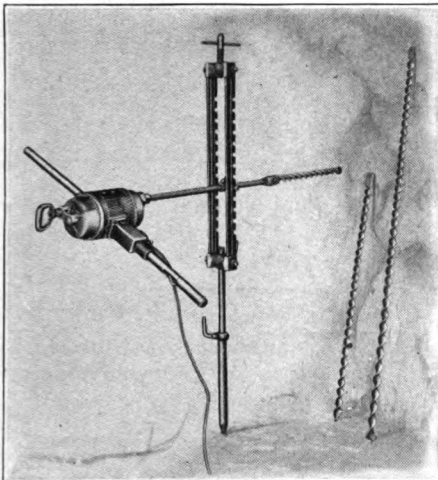


No. 4 Chicago Coal Drill with Breast Plate for drilling soft coal.

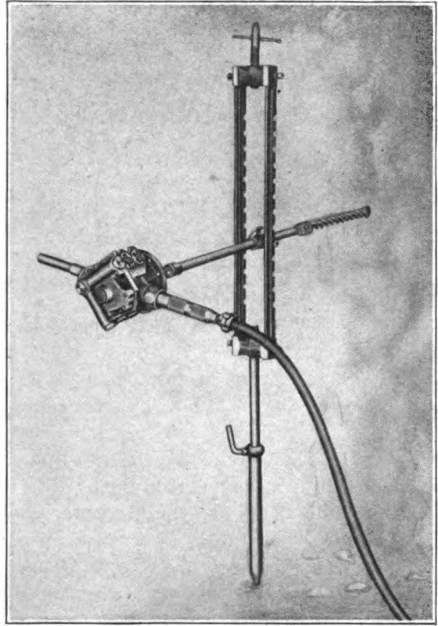
dred pounds pressure, and mounted on a light but strong "all steel" drill frame. It will be seen that the drill is loosely attached to one end of a feed screw that passes through a split feed nut which is swivelled on the drill frame, while on the other end of the feed screw is attached an ordinary auger socket and auger bit.

The Chicago Coal Drill being loosely attached to the feed screw on the drill frame by means of a flat taper socket, it can be slipped off the feed screw in the fraction of a second and laid on the ground while the auger bits are being changed or the drill frame is being torn down for a new setting. This makes it possible to move and set up the drill frame and mount the coal drill on it, with the greatest ease.

For drilling very soft coal the No. 4



No. 3 Chicago Coal Drill operated by electricity and mounted on "all steel" frame.



No. 2 Chicago Coal Drill operated by compressed air and mounted on "all steel" frame.

Chicago coal drill fitted with breast plate is used. The operator fits the brace about his body and pushes, the force thus exerted being sufficient to drill very rapidly.

Bulletin 150 (12 pages) just issued by the Chicago Pneumatic Tool Company goes into detail and throws a great deal of light on this interesting subject.

#### On the Safe Side.

It was noticed that a lady who went regularly to church always bowed at any mention of Satan or the Devil. At last a verger's curiosity was so aroused that he went and asked her why she did it.

"Well," she answered, "politeness costs nothing—and one never knows."

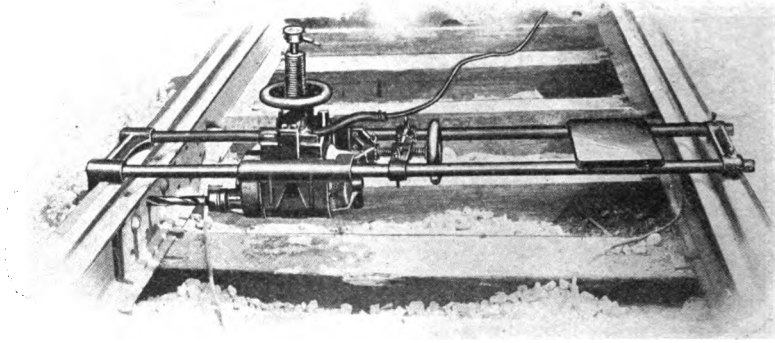
#### Ta! Ta!

There was a young maid from afar,  
Who ran like the deuce for a car!

To her zeal she was martyr,

For snap went her—shoestring—  
Too embarrassed for more—so Ta-Ta!





Duntley Electric Track Drill.

Above is shown the standard type of track drill, built for rapid work in rail bonding, drilling tie and joint holes and for reaming joint holes. It is built in three sizes as listed below.

Size.	Drilling Capacity in Metal.	Morse Taper Socket.	Weight in Pounds.	Speed at Full Load.
No. 2 Track				
Drill.....	¾"	No. 2 M. T.	90	250
No. 3 Track				
Drill.....	1 "	No. 3 M. T.	140	150
No. 4 Track				
Drill.....	1½"	*No. 3 M. T.	185	130
*No. 4 Socket can be furnished on No. 4 Drill if desired.				

Special Chucks can be furnished on order to take drill bits having other than Morse Taper Shanks.

It will be noted that the frame does not bolt to the track, but is simply hooked over the rail to be drilled, the operator holding down the other end of the frame by sitting on the seat provided, which brings him into a convenient position to operate the feed. The side spindle feature of the drill permits drilling close to the ties without the use of an angle-attachment, and the vertical adjusting screw with guides for the drill affords ready means for locating the holes vertically on ordinary tee or deep girder rails. The horizontal rods are of heavy seamless drawn tubing, and the bearing surface of the drill

guides on the rods is very long, insuring true, straight holes so essential for efficient bonding. The cross bar carrying the feed nut is located on the horizontal rods by means of eye pins which are easily withdrawn for the rapid removal of the drill from the track after drilling the hole, or for sharpening the drill points. A series of holes in the horizontal rods provides means of accommodating varying lengths of bits. The drill itself can be removed from the frame by taking out four cap screws, and it can then be used as an independent portable tool.

Getting Even.

A little boy had been punished by his mother one day, and that night at bedtime he prayed thus:

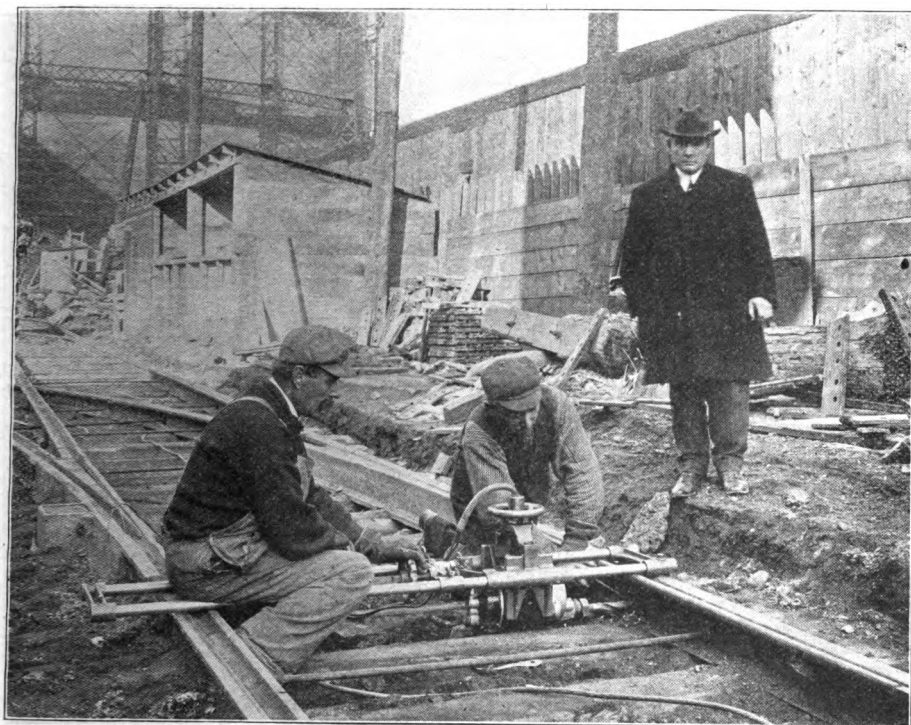
"Dear Lord, bless Papa and Sister Lucy and Brother Frank and Uncle Fred and Aunt Mary and make me a good boy. Amen."

Then looking up into his mother's face, he said: "I suppose you noticed that you weren't in it?"

How It Was Accounted For.

"How does it happen," said the teacher to the new pupil, "that your name is Allen and your mother's name is Brown?"

"Well," explained the small boy, after a moment's thought, "you see, she married again and I didn't."



Showing Duntley Electric Track Drill at work on Montreal Tramways.

**Duntley Electric Track Drill Used by the Montreal Tramways Co.**

There are about twenty of these drills used on overhead as well as track work of this company and they have given entire satisfaction. Some idea of the economies effected by their use may be obtained from the following figures representing an average of ten days during December, 1913:

231 1 1-8 inch holes cost \$17.69, averaging 7c each; 544 1 inch holes cost \$32.92, averaging 6c each, against 175 by hand at a cost of 22 cents each. These costs included the moving to and from the station.

**New Bulletin.**

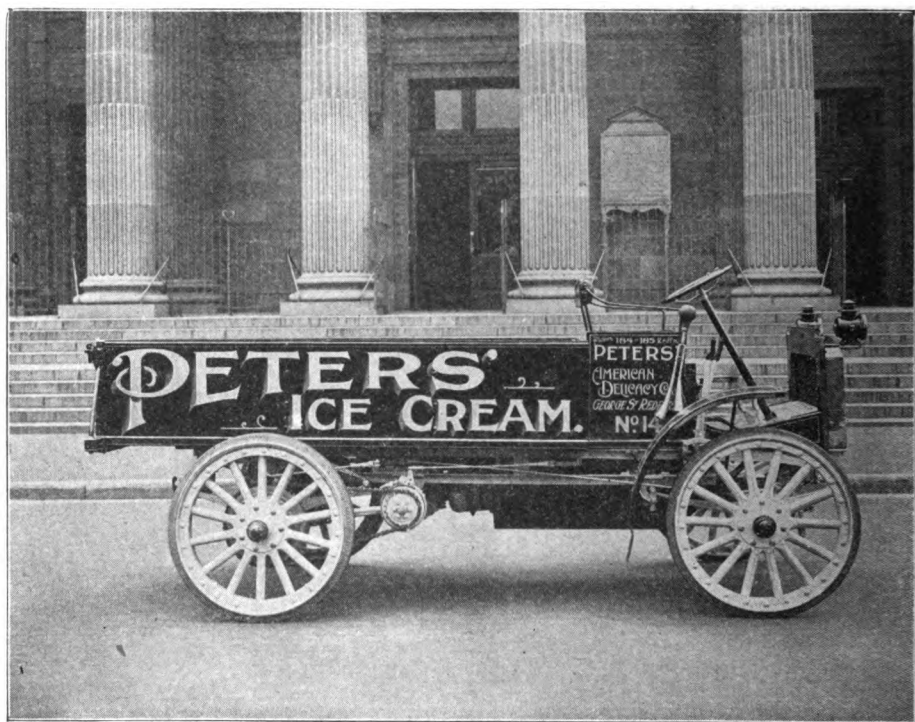
Duntley Electric Tools for Street and Interurban Railways is the title of a new Bulletin No. E32 just issued by the

Chicago Pneumatic Tool Company, which describes a line of portable tools specially for use on this class of work.

The high voltage and rough handling to which tools for this class of service are subjected calls for the most careful design, insulation and general construction. That these points have been taken care of is shown by the fact that nearly all of the prominent electric roads have adopted the tools and prospective users are referred to a list of roads having in service over 500 track drills. Of the other tools shown in the bulletin hundreds are in successful use on electric roads.

The bulletin also describes a line of heavy duty side and center spindle drills, portable electric grinders, including a new side spindle grinder, and the Duntley electric spike driver.

The bulletin will be sent on request.



A Little Giant Truck in the service of the Peters' American Delicacy Company, Sydney, Australia. There are a number of Little Giants in use in this part of the world.

### Little Giant Truck Has Hard Trip Reaching Neosho.

A remarkable trip from St. Louis to Neosho, Mo., was made last week by a Little Giant one-ton truck, sold to L. H. Staub, a machinery manufacturer of Neosho, by the Corby Supply Company, says the St. Louis Globe Democrat. A large part of the trip was made in a rainstorm, the clay roads necessitating the use of makeshifts to increase traction. The truck made the trip of 415 miles without accident.

The route pursued was laid out by the Blue Book, supplied by the Automobile Club of St. Louis. It traversed Washington, Jefferson City, California, Sedalia, Clinton, Butler, Nevada, Lamar and Carthage to Neosho. A driver assigned by the Corby company accompanied the truck party as far as Washington. Thence Staub and his son made the trip alone.

"When we got to Nevada," Staub says in a letter just received by the Corby Supply Company, "it began to rain. The clay road in this country gets muddy quickly. We bought 50 feet of rope and wound it around the rear wheels to increase traction. The rope lasted just four miles. At Milo we got four trace chains and wound them around the rear wheels. They got us to Neosho by 8:15 p. m."

Staub expresses himself delighted with the truck.

### "The Whole Truth."

"You say the prisoner had been drinking," said his Worship. "Drinking what?"

"Whisky, I think," replied the intelligent officer.

"You think? Don't you know the smell of whisky? Aren't you a judge?"

"No, yer Worship; only a policeman."



L. V. Pike, Aurora, Ill., is delighted with a Model H Little Giant he has annexed to his dairy business.

#### Miller Builds Body and Saves Tomatoes.

There is nothing like being up to the minute and working overtime when necessary to please a customer.

J. Padula, a Santa Fe Springs trucker, called on H. L. Miller, the Little Giant truck dealer, last week, and said: "My tomatoes are rotting in the field. I can't get them to the city fast enough. I'll have to have a truck, but I can't get one with a body."

"That's easy," remarked Miller. "We'll see what we can do for you." Padula was like Barkis, so a Little Giant was put in order; two carpenters called in and with Miller himself wielding a saw, they went to work at 3 o'clock in the afternoon. By 9 o'clock the body was made and by midnight the truck was in Padula's field. The first run was made to the city before daylight and the tomato crop was saved to delivery.

Mr. Miller is Pacific Coast distributor of Little Giant trucks for the Chicago Pneumatic Tool Company. He has had wonderful success. One does not have to look further than this article for the cause. Such strenuous efforts to please

a customer indicate a degree of interest and enthusiasm which makes success but a natural outcome.

#### Little Giant Gets First Blood.

It is a significant fact that at the spring automobile show recently held in St. Louis the first sale (on Monday) was made by E. S. Cole of the Corby Supply Company, who sold a Little Giant truck to the Butler-Vernon Mercantile Co. of Salem, Mo. The truck is to be used in delivery service for the company, but remained on exhibition during the show.

#### Sure of That.

A new recruit was out for target practice, and his target seemed the only point in the landscape quite safe from his bullets.

"Great Scott, my man," said an officer hurrying up to him. "Where are your shots going?"

"I don't know, sir," replied the man confidently, "but they left here all right."

# IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air  
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.

1014 Fisher Building

CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

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No. 12.

## TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 50 cents per year

## ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our  
subscription list.

## No April Number.

This the March number completes the tenth volume of Ideal Power which began publication in April, 1904. Its date of issue has been the fifteenth of the month.

Commencing with Volume 11, Ideal Power will make its appearance on the first of the month and the next number (the May number) will reach you about May 1st. In consequence of this change there will be no April number. This new date of issue will suit our convenience a great deal better than the old and we hope our readers will be just as glad to receive us on the first as they have been on the fifteenth of the month.

## Complete List of Boilermakers.

The Supplymen's Association of the American Boiler Manufacturers' Association has compiled a very complete list of boiler, tank and stack manufacturers of the United States and Canada in book form, giving the names and addresses according to states, which is ready for distribution at three dollars (\$3.00) per copy. Anyone desiring to receive a copy of the book will kindly address the undersigned.

F. B. Slocum, Secretary, Supplymen's Association of the American Boiler Manufacturers' Association, West and Calyer Streets, Brooklyn, N. Y.

Tell them you saw it in Ideal Power.

## Tool Company Elects Officers.

At the annual meeting of the Chicago Pneumatic Tool Company held on Feb. 16, the following directors were re-elected: C. M. Schwab, James H. Ward and John R. Turner. W. B. Seelig was elected a director vice Jos. Mohr resigned.

The following officers were elected for the ensuing year: W. O. Duntley, president; G. A. Rees, vice-president; Leroy Beardsley, treasurer; W. B. Seelig, secretary; R. S. Baker, auditor; F. C. Bassett, assistant treasurer, and Thomas Aldcorn, assistant secretary.

## The Duff Manufacturing Company Establishes Offices and Warehouse in Chicago and Appoints Representative in St. Paul.

By mutual agreement the Fairbanks, Morse Company have withdrawn as steam railroad agents for the products of the Duff Manufacturing Co. of Pittsburgh, Pa., the well known manufacturers of the Barrett track and car jacks, Duff ball bearing screw jacks and Duff-Bethlehem hydraulic jacks. At the same time the Duff Manufacturing Company has established a Chicago office and warehouse, in charge of Mr. Charles N. Thulin, recently with the C. P. T. Company, and now western sales manager for the Duff Manufacturing Company. Increased service will thereby be insured western customers. In addition comes the appointment of Mr. B. W. Parson, with offices in the Pioneer Building, St. Paul, as district representative for the same company.

## Leave It to Pat.

"What is that they mane by virgin soil, Pat?" queried McCarthy.

"Virgin soil, is it? Shure, it's just soil where the hand of man has never set foot."

Even light beer has been known to generate a dark brown taste.



H. S. Hunter, Manager Pittsburgh Office, Chicago  
Pneumatic Tool Company.

## **Pneumatic Tools, Their Origin, Uses, Etc.**

**By H. S. HUNTER**

**From a Paper read before the Fellows' Club, Pittsburgh**

It is an old and true saying that "Necessity is the mother of invention." The enlightened mind of mankind has at all times been directed towards reducing physical effort to produce certain results. The laws of nature cannot be changed but they may be analyzed and civilization began when man set out to study nature's forces and direct them into channels beneficial and helpful to himself. This called into being his inventive genius to produce mechanical devices to do his work.

Very few of the wonderful inventions or labor saving devices we see in common use today were the result of accidental discovery, the majority being the evolution of the original idea brought to perfection by long, costly and patient

development, hence what might seem to some an unreasonable price for an article when compared with its cost of manufacture only means a fair margin of profit, when the cost of development is included.

It is my pleasure to give you to the best of my ability a brief history of the origin and development of portable pneumatic tools. By "portable" I mean machines that can be conveniently carried around in the hands of the operator; I do not refer to pneumatic tools or machines of stationary or semi-stationary types. The power used to operate pneumatic tools, as the word implies, is compressed air generated by an air compressor which may be direct driven either by steam, gas, gasoline,

electric motor, water power or by belt from any of these sources of power. The air pressure usually carried is from 80 to 100 lbs. per square inch. I might mention here that air and steam are both elastic fluids and are similar in this respect, but steam cannot be used conveniently to operate portable pneumatic tools as the temperature rise of the machine would be such that the operator could not hold it. The air is conveyed from the compressor or from a receiver used to overcome the pulsations of the compressor through a pipe line to within 40 or 50 ft. of the work, depending on the radius of operation desired, and then through a flexible hose to a connection on the tool. The tool is provided with a throttle valve within the grasp of the operator which enables him to start and stop the machine without releasing his hold.

Pneumatic tools may be divided into two classes, the percussion motor or what is commonly called the pneumatic hammer and the rotating motor commonly called the pneumatic drill or reamer.

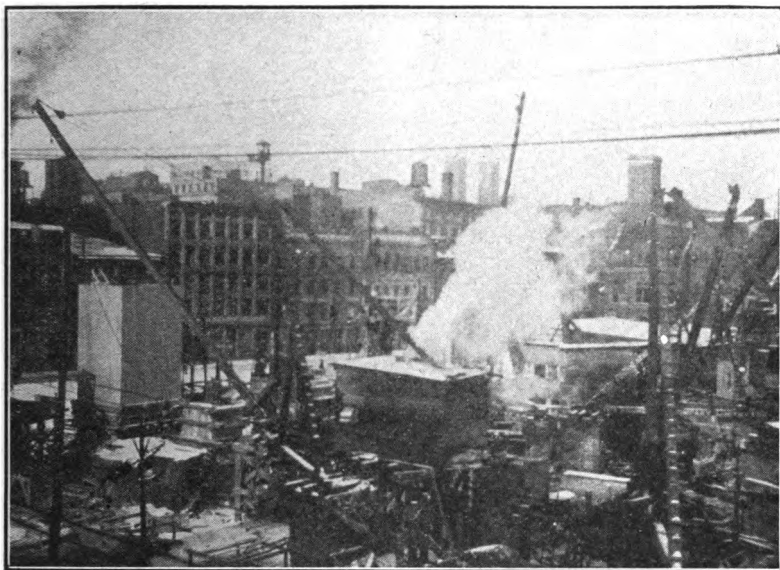
As is the case with a great many of our modern labor saving devices, we owe the original idea of portable pneumatic hammers to England, but it rested with us to develop this idea and put it into practical use. The original pneumatic hammer was used for filling teeth, they were known as pneumatic dental pluggers and to this day are used by a great many dentists for this purpose. From the miniature dental pluggers of 30 or 40 years ago the present portable pneumatic hammer has been developed. It is rather difficult to convey in words the mechanical principles employed. You can imagine, however, an air gun, the bullet of which would correspond to the piston of a pneumatic hammer. Suppose we place in the forward end or muzzle of the gun the shank or end of a piece of steel which is provided with a shoulder that will allow it to enter the muzzle only a given distance, the opposite end of the steel is dressed or machined to suit the work we wish to do. In case of driving rivets the steel

would be cupped to form a rivet head. If we wished to chip or cut iron or steel we would shape the forward end of the steel like a chisel and so on for any work, such as beading flues, calking boilers, carving marble, stone, etc. The operator places the forward end of the steel against the work and presses the trigger or opens the throttle valve, holding it open, the piston is projected forward in the cylinder striking the shank of the steel. The instant the blow is struck the piston is returned to the rear of the machine for the next stroke. This forward and return movement of the piston is controlled by an automatic valve placed in the rear of the cylinder, the valve in turn being actuated by the piston through communicating air ports. The number of blows struck per minute range from 400 to 11,000, depending on the size, length of stroke and type of tool.

A fertile field for the use of pneumatic hammers in their early stages was calking the seams of steam boilers and other vessels built to withstand pressure. Before the introduction of pneumatic hammers no mechanical means were in use for this purpose and the average day's work of 9 hours for a man was about 85 lineal feet, while 390 ft. is not an exceptional day's work with a pneumatic calking hammer.

Two hundred and fifty rivets per day was considered a fair day's work for a crew of 3 men and a rivet-heater boy, while 2,000 rivets are being driven per day by a crew of 2 men and rivet-heater boy with a pneumatic rivet hammer; besides, considerable skill is required to drive a tight rivet by hand, while only ordinary intelligence is required to apply the pneumatic hammer.

Portable pneumatic motors or drills are a modern adaptation of the steam engine differing only in application the principle being the same. They are built in three types, the reciprocating piston, the rotary and the turbine principles being used, the former, however, seem to have the preference, due no doubt to the more compact form possible with this principle. They are de-



They're building a new Government Customs Examining Warehouse in Montreal, directly opposite the offices of the Canadian Pneumatic Tool Co. Boyer Hammers are used exclusively on steel superstructure.

signed to develop the maximum power with minimum weight and to meet the specific requirements for which they are built.

Some idea of the power developed by these miniature engines can be had when I tell you a machine weighing 40 lbs. will do the work of a modern stationary upright drill press weighing 1,800 lbs. and that they will lift a weight corresponding to 2,500 times their own weight one foot high in one minute with 90 lbs. air pressure. The modern portable pneumatic riveting hammer will develop power equal to 3,800 times its own weight in one minute with 100 lbs. air pressure or a machine weighing 22 lbs. will develop  $2\frac{1}{2}$  H. P., and continue to develop this power indefinitely, in spite of the extreme adverse conditions under which they are sometimes used. Some users complain of the maintenance cost of pneumatic tools, but when the enormous power developed compared with the weight of machine is considered, as well as the class of labor usually employed to operate them, there is an excuse for a somewhat higher cost of maintenance than would be the case with other types of machinery.

The pneumatic tool is perfectly satisfied to be judged by the quantity and quality of its work as compared with any other device or tool made and when final results are considered the cost of maintaining pneumatic tools dwindles into insignificance.

Compressed air is considered a harmless power because it does not have the "kick" of steam or electricity, and for this reason some fatal accidents have occurred from carelessness and from ignorance of the men as to the results of "practical jokes."

### He Knew.

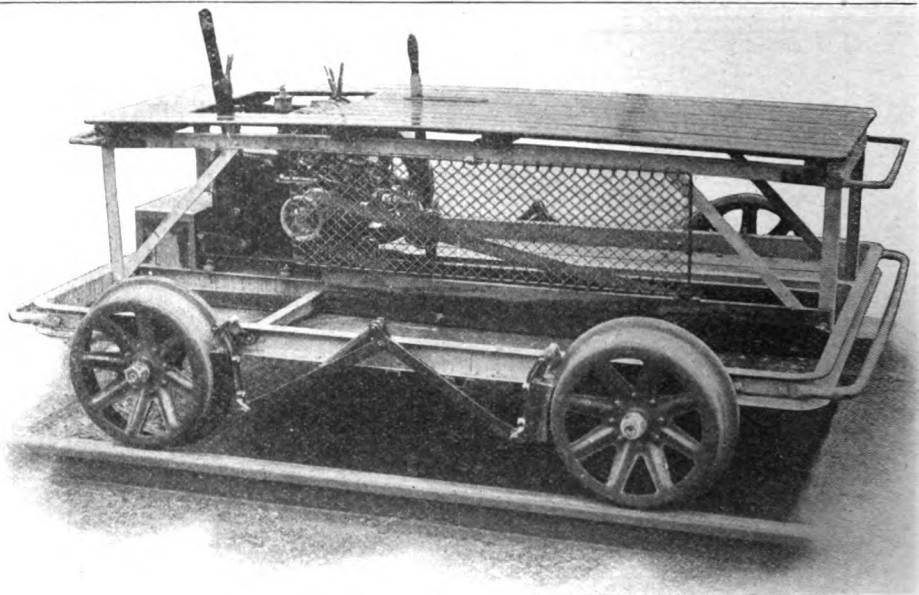
A Washingtonian, who was touring the Shenandoah Valley, stopped his motor car in the road one day and asked an aged darky who was painfully proceeding in the opposite direction whether he knew where Mr. Simpkins lived.

"Yessuh," was the reply. "He live heah in de valley."

"Do you know where his house is?"

The aged negro chuckled. "Deed I do, boss," he said. "I only wish I had as many dollahs as I knows where dat house is."





This is the new No. 1 Rockford Car with free engine that you have heard them talking about

#### NO. 1 ROCKFORD MOTOR CAR.

The greatest advantages of the free engine car is in being able to start regardless of ice and snow or wet and slippery rails and to start with load from a dead stop. This is not possible with a direct-connected engine.

In case of damage, to engine, it may be sent to factory for repairs or a new one secured and applied in a few minutes after receiving instead of shipping the entire car to factory or a long troublesome job in rebuilding a car of the direct-connected type.

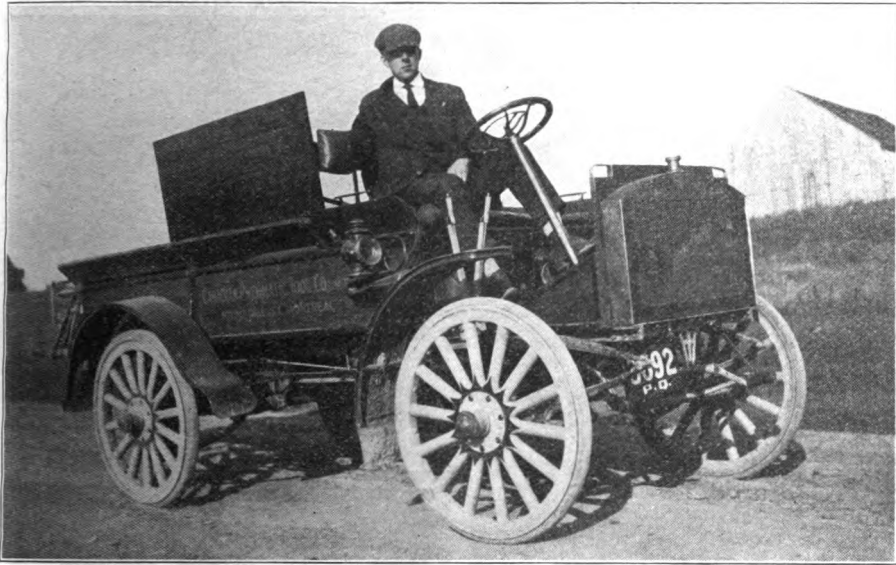
Following the standard practice in the construction of other models of "Rockford" railway motor cars, motor car No. 1 is built upon an all steel frame of 3-inch channel, the various members of which are welded by the autogenous process into a single unit. Absolutely no rivets or bolts used in this connection, which entirely eliminates any weakness or unnecessary noise in operation from loose joints.

The seat frame is composed of one and one-half inch angle iron in the manner standard in "Rockford" car con-

struction and is hot-riveted together into a completely removable unit, removal being effected by taking out four bolts. The side rails of the seat frame are cut sufficiently long to cause a noticeable bowing up of the seat top when the frame is sprung into position, thus effectually overcoming any tendency of seat to sag when carrying passengers.

Yellow pine slats are used instead of solid boards in the construction of the seat top which effectually eliminate the unpleasantness of long strips due to vibration and jarring over rough tracks.

The main frame is mounted on four steel wheels, 16 inches in diameter and with standard M. C. B. flanges. These wheels are made from our own design in a special form which leaves the metal in tread of wheels uniform in thickness and thoroughly overcoming the tendency to crack along the gauge line which is noticed on other pressed steel wheels. These wheels are of standard taper-bore and are pressed upon the tapered axle without keys or other troublesome fastenings. The wheels on left side of car are thoroughly insulated from the axle, mak-



King Edward Highway is a government road connecting Montreal with Rouse's Point, N. Y. The Provincial Government voted a large amount of money last year for this highway, which will be completed this year. Under the direction of the Automobile Club of Canada, roadway signs are being erected along the way, and a Little Giant Truck is shown engaged in this work.

ing it possible to operate car over track equipped with electric block signals without in any way disturbing them.

The No. 1 "Rockford" motor car is equipped with a reversible two-cycle motor of the hopper-cooled type, and is a self-contained unit, entirely removable in running condition and develops four horsepower. This type of gasoline engine reaches a power stroke at every revolution and is therefore practically equivalent to a two-cylinder engine of the four cycle type.

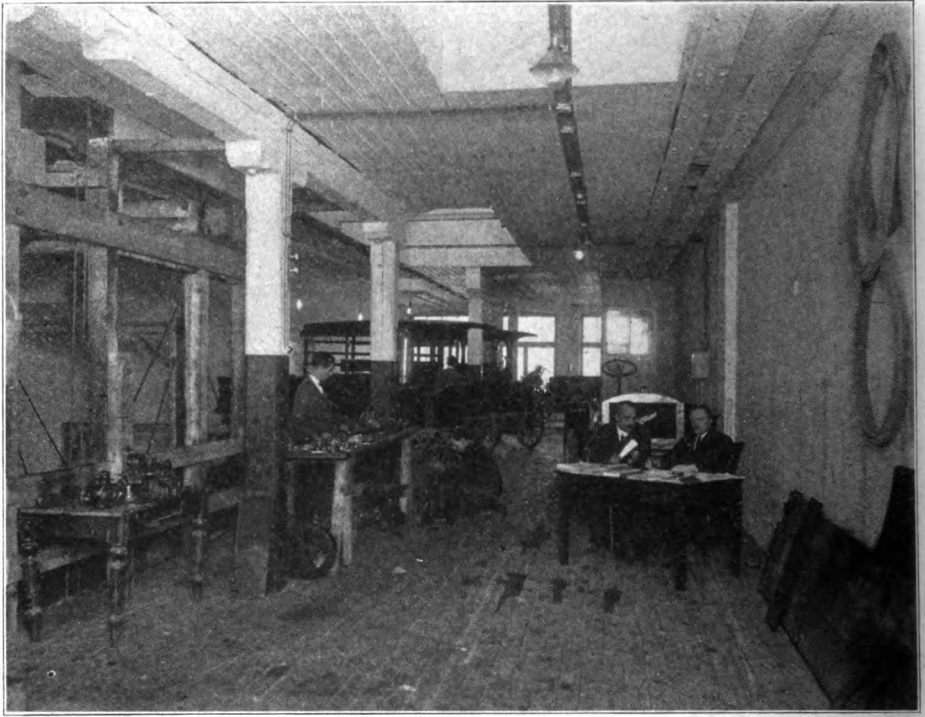
Crank case compression is easily maintained by turning up two set screws which operate against packing rings provided for the purpose.

Cooling of the motor is secured by filling the hopper or jacket with water through the opening at the top. About five gallons is required to fill hopper. In extreme cold weather when it is difficult to start the engine, in the morning, a pail or two of hot water put into the hopper will warm up the engine, and it is readily started.

There are no valves, gears, cams, cam shafts or other trouble making mechanism.

The gas is drawn from the carburetor into the crank case on the inward stroke of the pistons and compressed therein on the outward or power stroke and passed around the piston through parts in the cylinder walls, which are covered and uncovered at proper intervals by the piston, and is fired in the forward end of the cylinder when the crank shaft is on the inward center, and after driving the piston outward, is passed out into the air with a sharp report through a port on the opposite side of the cylinders, from which it entered, being followed at the same time by the next incoming fresh charge, which in turn, is going through the cycle of events just described.

The carburetor is of the float-feed needle valve type and is controlled by a lever found near the upper part of the engine. This carburetor is so constructed that it will form and deliver a



View of Little Giant Service Garage operated by the Canadian Pneumatic Tool Company, Montreal, agents for Little Giant Trucks in Canada.

good and easily fired mixture of gas without the very delicate adjustment usually necessary in this type and should the carburetor get out of proper adjustment by accident, it is a very simple matter to put it right again.

The gasoline is carried in a one and one-half gallon tank of 20-gauge galvanized steel, which is mounted on the engine and is in no way fastened to the frame of car. The gasoline is thus kept moderately warm and fires very readily in cold weather. One filling of tank will operate car about thirty miles.

The engine is equipped with the jump spark ignition system, which is composed of a single unit high grade spark coil and six dry batteries, this giving the simplest and most reliable ignition apparatus for railway motor car use. A very simple timer is mounted on the engine shaft and opens and closes the circuit at proper intervals. A switch is

provided to prevent accidental running down of batteries.

Lubrication of the cylinder is obtained by a sight-feed oil cup feeding oil directly into the cylinder, using a good grade of gas engine cylinder oil. The connecting rod bearing is lubricated by mixing oil with the gasoline in a ratio of one pint of oil to five gallons of gasoline. The same oil will do for both cases. The crank shaft bearings are provided with two grease cups.

Power is transmitted through a belt of special fibre, operating over pulleys, a small one on the engine shaft and a large one on the driving axle of the car. The motor is mounted on a sub-base bolted to the frame of car and is free to slide between guides on the sub-base. This movement is controlled by the operator by means of a lever and by moving the engine away from the driv-



Stock Room of the Canadian Pneumatic Tool Company, Montreal. It is up-to-date, complete and efficiently operated. Canadian customers of the Chicago Pneumatic Tool Company are assured of prompt and satisfactory service when emergencies arise.

ing axle the belt is made tight and car is put in motion.

To stop car, lever is pushed to slack belt and brakes applied.

To start engine, lever is moved to latter position and engine is cranked in a manner similar to that employed in starting an automobile.

Engine may be reversed by slacking belt, and cutting out spark with the thumb lever provided for the purpose, and when engine is about to stop, move the timer lever to the extreme opposite side and engine will run in the opposite direction without stopping.

This car will carry eight men and tools under normal conditions at an average speed of fifteen to eighteen miles per hour. A reasonable load may be pulled on a push car in addition to the load on the car.

The weight is so distributed that the greatest weight is on the idle axle, and it is quite possible for one man to handle car under favorable conditions, while two men can manage car at all times. One wheel on idle axle is loose and by lifting up the light end of car, it may be readily turned entirely around if necessary.

---

#### The Happy Investor.

He never clipped a coupon for he never owned a stock;

He never had a bank account—not even in a sock;

He never was mistaken for a putter-by of wealth—

His int'rest came in sunshine and his dividends in health.

—Cleveland Plain Dealer.

### The Hapless Host.

(An article on "Entertaining" in a daily paper contains this passage: "The host should always be at hand when wanted, but not too much in evidence.")

It is not mine to make a joke,

Or drink a toast,

Not mine to contradict when folks

Their prowess boast.

'Tis mine to list to Jones—the bore;

To greet his stories with a roar,

And, greatly daring, ask for more—

I am the host.

'Tis mine to bid the guests sit down

In honeyed tones;

To carve the liver wing for Brown,

The breast for Jones;

To heap the plates with dainties rare,

To give each man the gourmet's share;

And make my dinner from the bare

Residual bones.

I hover round the evening through,

A silent ghost.

Complacently endured by few,

Ignored by most.

But let them flout me as they will,

One privilege is left me still,

That is—to liquidate the bill—

I am the host!

---

### Then Everybody Laughed.

Little Jack, aged five, had accompanied his mother on a trip to the city. They made the journey by trolley car.

Presently the conductor came round to collect the fares, and, on approaching little Jack, of course asked the usual question:

"How old is the boy?"

The mother informed him, then he passed on to the next passenger. But the lad who was the subject of the inquiry sat quite still, apparently pondering over something, until at last, concluding that full information had not been given, he called loudly to the conductor, now at the other end of the car:

"And mother's thirty-five!"

### The Wedding of the Rose and the Lotus.

(A poem written on the near-completion of the Panama Canal, showing the genius of the West, here typified by the Rose, and the genius of the East, here typified by the Lotus, are to be merged and mingled in one.—Nicholas Vachel Lindsay, Rhymer and Designer, Springfield, Ill.)

The wide Pacific waters

And the Atlantic meet.

With cries of joy they mingle,

In tides of love they greet.

Above the drowned ages

A wind of wooing blows—

The red rose woos the lotus,

The lotus woos the rose.

The lotus conquered Egypt.

The rose was loved in Rome.

Great India crowned the lotus:

(Britain the rose's home).

Old China crowned the lotus,

They crowned it in Japan.

But Christendom adored the rose

Ere Christendom began.

The lotus speaks of slumber:

The rose is as a dart.

The lotus is Nirvana:

The rose is Mary's heart.

The rose is deathless, restless,

The splendor of our pain:

The flush and fire of Labor

That builds, not all in vain.

The genius of the lotus

Shall heal earth's too-much fret.

The rose, in blinding glory,

Shall waken Asia yet.

Hail to their loves, ye peoples!

Behold, a world-wind blows,

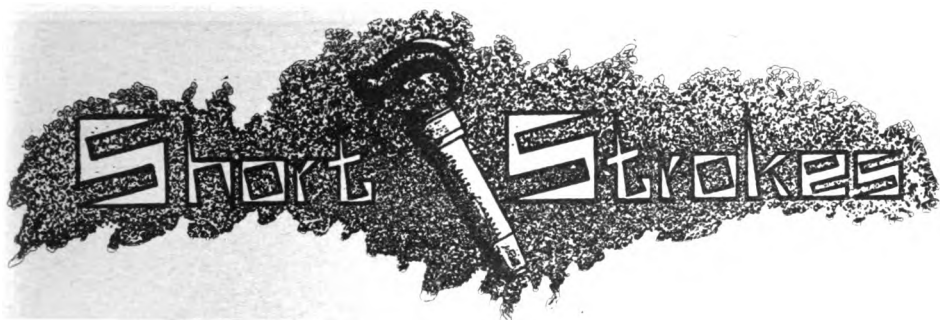
That aids the ivory lotus

To wed the red, red rose.

---

### His Bluff.

"Strategy," said Private Murphy, up before the sergeant for examination, "is whin yez don't let the inimy dishcover that ye are out ov amunishun, but kape on frin'!"



Many are called, but more are bluffed.

Electric signs let out some brilliant remarks.

A grass widow is never as green as she pretends to be.

But a crank ceases to be a crank when he does you a good turn.

A woman seldom nags her husband unless he is that kind of husband.

They say that happiness is a habit. Well, here's hoping you'll get the habit!

Indifference is the one thing capable of freezing the milk of human kindness.

No man ever lived long enough to do all the things his wife wanted him to do.

Some men wait for things to turn up, and some others turn them up while they wait.

There are two sides to every story. The victory we win spells defeat for the other chap.

Had one of our suffragettes been in Mother Eve's place, what a fool she would have made of that snake!

A man thinks he has a right to entertain a lot of thoughts what would probably land him in jail if he were to let them escape.

Cleave to the good and use a cleaver on the rest.

Knowledge is the gradual discovery that you possess precious little.

After a self-made man finishes the job he closes the factory.

Never call a woman an old hen because she is set in her ways.

A man's wife always agrees with him when he doesn't want her to.

If a woman has no other excuse she marries a man to reform him.

When a small man gets into a big job you can always hear the rattle.

The wise man does his duty and lets the other fellow do the explaining.

If a woman is thin she can make up for it, but there is no help for the obese.

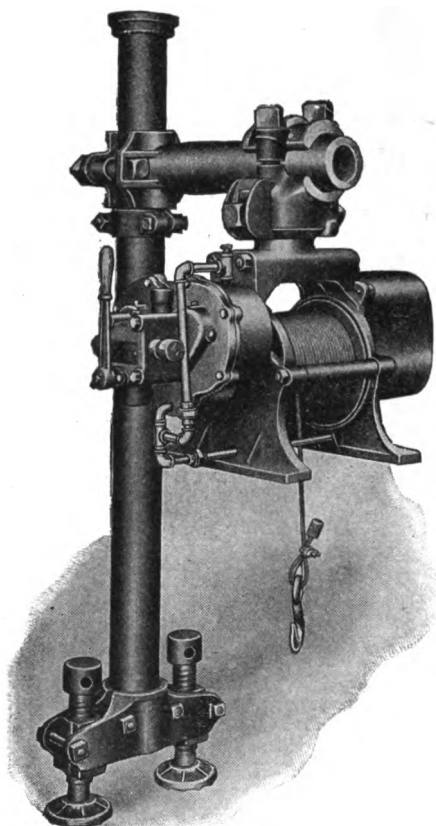
No man can appreciate the best of it until after he has got the worst of it a few times.

Wonder what would happen if the Lord were to follow all the advice that is handed to him in prayer?

Did it ever occur to you that the majority of men who live the simple life are separated from the rest of the world by double strength steel bars?

# Chicago Portable Mine Hoist

An Air Hoist that is indispensable underground.



CHICAGO MINE HOIST  
Clamped to Double Screw Column.

The CHICAGO PORTABLE MINE HOIST solves the question of how to raise and lower timber and rock economically and quickly in Raises, Winzes and Stopes, and is indispensable in an efficiently managed mine because of the ease with which it can be set up or torn down and transported from point to point, the great tonnage it will handle, doing it in a tenth of the time required by hand labor, and the consequent large saving in labor cost effected by its use.

The CHICAGO PORTABLE MINE HOIST will coil 200 feet of  $\frac{1}{4}$ " wire rope and hoist 650 pounds at a rope speed of 90 feet per minute, and is guaranteed to do this with 80 pounds air pressure.

Write us for Bulletin 149, which tells all about this Hoist, its construction, uses, etc.

## CHICAGO PNEUMATIC TOOL COMPANY

1014 FISHER BUILDING  
CHICAGO

50 CHURCH STREET  
NEW YORK

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# IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances  
By THE IDEAL POWER PUBLISHING COMPANY  
Fisher Building Chicago

Vol. 11.

MAY, 1914.

No. 1.

## Why We Sell the Little Giant Truck

By W. E. ELDRIDGE  
of the Little Giant Truck Co. of Boston

We are motor truck people here, and have been assembling and marketing heavy-duty trucks for five years. Before that, the writer had been an automobile man since 1901, and as a pioneer dealer brought the first Cadillac and the first Buick to New England.

We have been quite successful with our heavy-duty trucks, and in Greater Boston our vehicles are hauling more coal and more lumber than all other makes of motor trucks together. We have no dissatisfied customers, and all of our fifty-odd five and six-ton trucks are in the hands of the original purchasers.

It would seem that these statements have nothing to do with the subject of this little article, but we wish to show that we have had experience and success almost from the inception of the motor vehicle industry, and naturally view the truck proposition with the cold, calculating eye of the fellow who has been "through the mill."

During the past five years the matter of rounding out our line by taking on a light truck has come up again and again. We suppose that at one time or another we have been drummed by almost every other roadman in the truck business.

The writer in 1908 fitted up five two-

cylinder touring car chasses with delivery bodies, and put them at work in five different lines of business hauling on contract. This was done with a view of getting statistics on earning capacity, costs of operation and interruptions of service. These pleasure vehicle chasses were well built, simple and strong. We knew all about them because we had marketed and cared for over a thousand of this particular make. As good operators as we could get were hired, but we had our troubles. One day the entire five were hung up with various troubles, and we were 100 per cent out of business.

This experiment and later observations taught us two things in particular: first, that pleasure vehicle chasses, new or second-hand, made over into "trucks," do not stand up except over pneumatic tires; and even then not any too well; second, that trucking over pneumatic tires is nearly always prohibitive in cost.

From then on we kept looking into various light truck propositions as they came out. During the earlier stages, practically all such trucks were turned out by pleasure vehicle makers. Examination showed that these "trucks" were simply a convenient dumping ground for



A Little Giant Model H that delivers electric washing machines on the streets of Chicago and vicinity.

obsolete pleasure vehicle parts, and that the chasses were unsuitable for the advertised purposes. These practices are still prevalent, and are partly responsible for the just suspicion with which the motor truck industry is viewed by many earlier purchasers, who bought not wisely but too soon.

We have always had certain ideas about what the ideal light truck proposition should be.

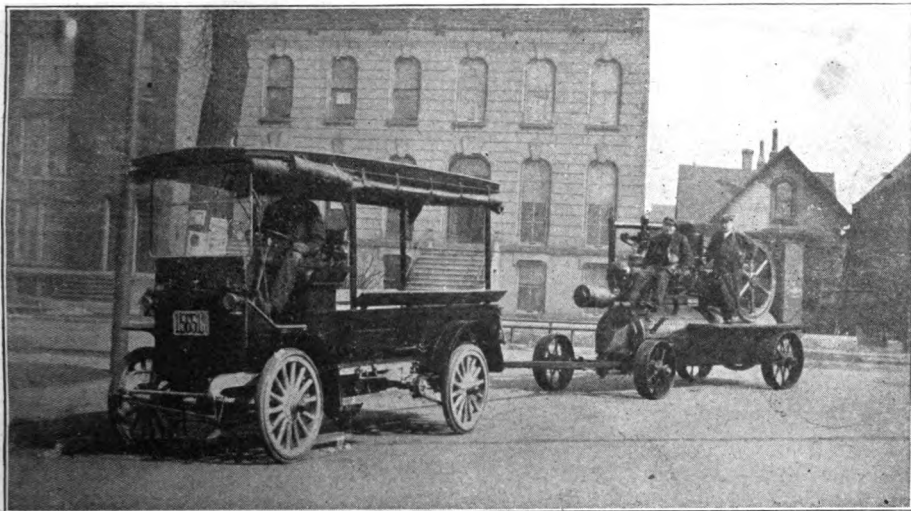
In the first place, we cannot find any one who ever made any money trucking over pneumatic tires. Counting five tires to the set (four on the wheels and one spare), a one-ton truck running ten thousand miles per annum will chew up on the average three sets of five-inch shoes, or fifteen shoes in all, and twenty tubes. This makes a rubber tire bill of say \$750 per annum, or \$2.50 per work-

ing day. How is the owner going to get that back in addition to the other expenses? He isn't.

Next—a real truck should have a short wheel base. Long wheel base means wasted time and effort in getting in and out of tight places. When we cut the corners off our customer's fine but narrow driveway, he doesn't like it, and it's good business not to offend well-to-do patrons. Also, the longer the wheel base, the weaker the chassis.

Then, again, there should be proper weight distribution. This seems so obvious that no time or space will be taken here to show the folly of balancing the pay load over the rear axle. The increase of tire cost alone is enough to condemn this practice.

A rear axle should be solid—not split. Driving gears and differentials should



A Model H Little Giant Auto Truck hauling a "Chicago Pneumatic" Portable Gasoline Engine Driven Air Compressor (weight 8700 pounds). Two of the latest products of the Chicago Pneumatic Tool Co.

be OVER the springs, not under. This, too, is axiomatic.

If people are to find trucks profitable, the investment must not be prohibitive. The price must be RIGHT. We can't figure anything in the performance of the average one-ton truck that justifies paying \$2,000 for it. Neither do we see anything but loss and exasperation ahead for the man who tries to turn a second (or third) hand pleasure car into a "truck," or who buys a too cheap new one; \$1,350 is about right for a good one-ton chassis. There is no sense in paying more, and little in spending less.

The editor said eight hundred words for this effusion, and the writer's pen is running away from him.

To wind up, we think that in addition to the above factors, a truck agent, to be permanently successful, must be backed up by a maker large enough and strong enough to keep out of the sheriff's hands, and who will continuously co-operate with agents.

And then—that ADVERTISING campaign.

If any of the readers of "Ideal Power" are considering a truck agency, and

feel that the writer has not made out a clean case for the "LITTLE GIANT" truck as against all comers of like carrying capacity, there are further numerous minor reasons why we took it on, which any one can have by mail for the asking.

We are IN RIGHT.

#### Brudder Brown Gets Careless.

A colored parson, calling upon one of his flock, found the object of his visit out in the back yard working among his hen-coops. He noticed with surprise that there were no chickens.

"Why, Brudder Brown," he asked, "whar' all yo chickens?"

"Huh," grunted Brother Brown without looking up, "some fool niggah lef' de do' open an' dey all went home."

#### Not Yet.

"You're a pretty old man to be begging," said the lady to the man at the back door.

"Yes, ma'am," replied the man with his hat in his hand.

"Have you been begging all your life?"

"Not yit, ma'am."





## Bear Traps and Duntley Electric Drills

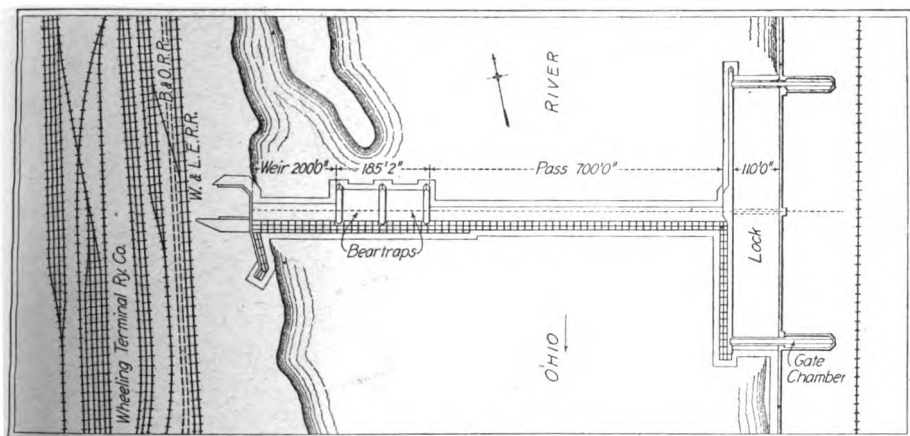
The photograph reproduced above was recently taken at the yards of the Penn Bridge Co., at Beaver Falls, Pa., and shows a number of 3x Duntley Electric Reamers at work on the Bear Trap, for Dam No. 10 of the Ohio River Lock and Dam Improvement now under way. On this particular job there were 14,000 holes to be reamed from 11/16 to 13/16 inch through two plates, and one angle, making a total thickness of 1 1/4 inches. The bear traps used on Lock and Dam 12 of the Ohio River improvement is similar in construction, and is thus described in the Engineering Record of Feb. 7.

Lock and Dam 12 of the Ohio River improvement below Pittsburgh are low concrete structures built by the U. S. Government to improve the navigation of the river. The river bed consists of sand and gravel about 20 ft. deep, overlying approximately level shale rock, and the river has a low-water depth of 2 to 9 ft.,

with sloping banks from 50 to 60 ft. in height. The construction involves a large amount of pile-driving, concreting and pumping and has been carried on in sheet-pile and gravel cofferdams, high enough to exclude ordinary stages of water. They have been subjected to very high floods and have withstood repeated submersion. They have also successfully resisted impact and pressure from large amounts of drift and ice and have enabled the site to be pumped dry except in high floods.

### General Design.

The dam crosses the river at Martin's Ferry nearly at right angles, and with the locks forms a continuous concrete structure, T-shape in plan. A power house is built at the intersection of the lock and dam, and both lock and dam masonry rests on foundation piles driven to rock. The dam is 1120 ft. long, including a



Map showing location of Bear Traps.

700-ft. navigable pass, two 91-ft. bear-trap sections, three bear-trap weirs, and a 200-ft. weir with end abutment on shore. The pass has a concrete bottom slab 35 ft. wide, 5 ft. deep and 3 ft. in the clear below low-water level. It serves as a floor on which are installed Chanoine wickets 11 ft. high.

The 110x600-ft. lock is at right angles to the dam and is adjacent and parallel to the east bank of the river. The river wall is about  $23\frac{1}{2}$  ft. high and the shore wall about  $25\frac{1}{2}$  ft. high. The steel gates slide horizontally at right angles to the locks into concrete chambers constructed in the river banks. The face of the river wall is protected by rock-filled cribs and riprap, and the shore wall retains a backfill supporting the concrete pavement of an esplanade.

The floor of the lock is paved with 6x8-ft. concrete blocks 18 in. thick, cast in place. The shore wall of the lock is extended about 600 ft. upstream, and downstream, from the gates to form guide walls, on pile foundations. The upper guide wall is 11 ft. wide at the base and 5 ft. wide at the top, with a height of 24.4 ft. and top of wall 5 ft. above upper pool level. The lower guide wall is 9 ft. 6 in. wide at the base and 5 ft. wide at the top, with a vertical height of 21 ft. The top of the wall is 6 ft. above lower pool level.

### The Trials of a Service Garage Manager.

Anyone who thinks that running a service garage in a big city is a synonym for pleasant dreams has another think coming; for there is no better place to jostle elbows with human nature in unusual and peculiar forms than in a truck repair palace.

To some people the turning of a wheel on an axle is a most mysterious phenomenon. They stand in reverent awe of anything mechanical. The use of monkey wrench or lubricating oil calls for mental and mechanical science far beyond their grasp, and as for grey matter, well they may have some somewhere, but not in their heads.

These may be the wild theories of a soreheaded service garage manager, and yet when you consider the things he goes up against, he is to be forgiven for having a pessimistic vein or two in his make-up.

Below are some extracts from a service garage manager's note-book:

Here is one instance:

"Last week one of our customers changed his drivers, so he got one of his shop help and put him on the car for a week with the old driver. After getting instructions for a week he was sent out alone with the car. The second day he was out he came into the service department all out of breath, as he had his car standing about three-quarters of a





A Little Giant in Roanoke, Va., with "some" load.

mile from the garage, and told us that there was something wrong, as he could not run the car or shut off the motor. He stopped in the center of the road and a policeman was about to arrest him for letting his motor run while he was out of the car. He told the policeman that there was something wrong with the car, that he could not shut off the motor nor get the car to the curb stone; so the policeman and the driver pushed the car to the curb stone and he ran all that distance and told us to go and look at his car.

"He could not move the car, as he had sheared off a jackshaft key and there was no trouble with the motor. The reason that he could not stop it was that he had been running on battery, and in order to shut it off he ran it on magneto. Consequently the motor would not stop, as he was running it on battery and switching it on magneto. He evidently had been running that day and

the day before on battery alone, unconscious of his ignorance.

"That same night he drove into our garage and could not get up the incline. I happened to be near the door and noticed that his emergency brake was on. I told him to release the brake, and he said he had been trying to do this all the way down, but it would not go and showed me how he tried to release it, which was nothing more than trying to put down the high speed lever while the emergency brake was on. He evidently had been running on low speed for some time and at the same time had the brake applied."

These are only a few samples of human stupidity that service garage managers come in contact with.

Anyone wishing to contribute similar experiences will kindly address the editor. From time to time we shall publish these stories for the good of the cause.



Hauling garbage in Washington, D. C. The novel spectacle of a Little Giant Truck (1-ton rated capacity), itself loaded to the guards, hauling two loaded trailers.

#### Motor Trucks for Country Stores.

"Yes, I think we can please you; we have the largest assortment of furniture in the city."

"Well, we'll look at what you have. We are just looking today. We haven't quite decided to buy just yet, you know."

"Where are you living?"

"We live seven miles in the country. We have just built a new house on a small farm there and we sort o' thought we would like to have some new things, but I don't know whether we'll buy or not."

"I shall be glad to show you what we have, and if you do decide to buy anything we'll deliver it to your home for you without extra charge."

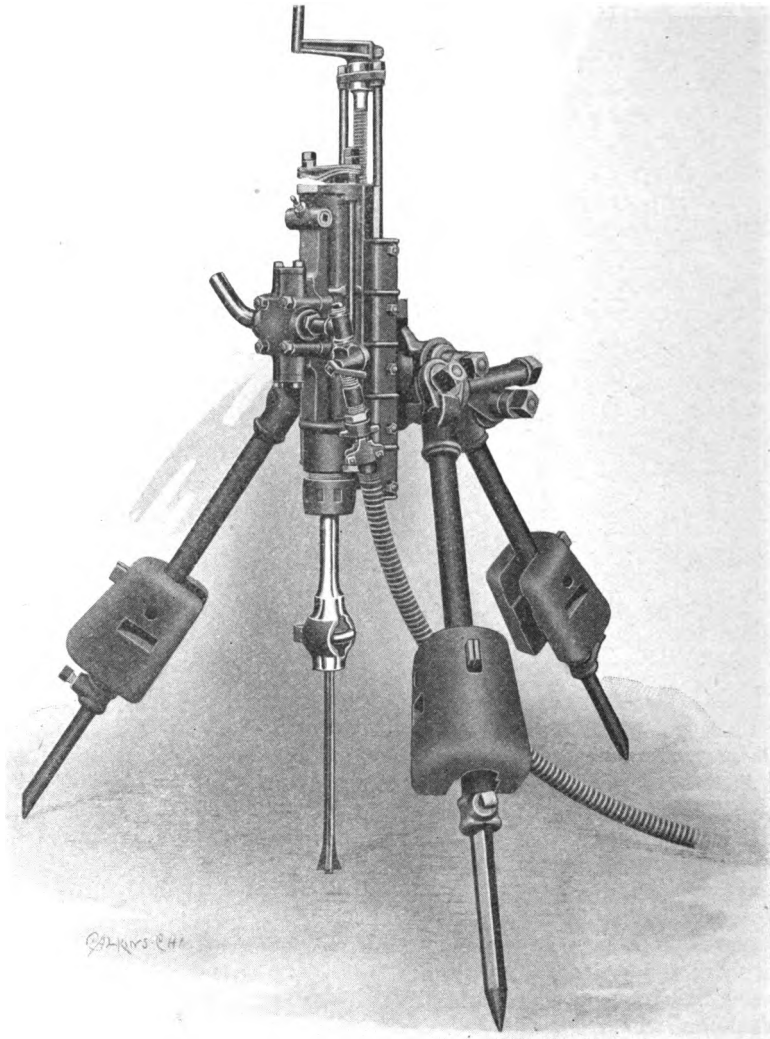
"Oh, you will?"

"Yes, we make a practice of delivering everything purchased here, no matter where the customer lives."

That settled the question, and the couple bought \$200 worth of furniture, says the Furniture Journal. Persons from the country usually hesitate about buying much furniture because, for some reason or other, they seem to think it

rather a task to get it home in good condition. The auto has made it possible to get all of this doubtful country trade, because in just about the same time it would take to make a city delivery with a horse, the country delivery is made.

If those same goods had to be shipped by train to their town they would not buy so many articles, and the dealer would have to spend much more in time and freight charges than the cost of delivering by automobile. Where it has been found that it costs as much to maintain the truck as it did to care for one team of horses, the truck has increased the business and does so much more work that the services of one man have been dispensed with. Persons seeing an attractive looking truck going about the streets and the country roads remember the name of the store and go there when they are interested in furniture, for everyone likes to deal with a progressive man. The progressive spirit is apparent inside every such store as well. The driving of the truck has had a psychological effect upon the owner.



"Chicago Slogger" Drill.

#### The "Chicago Slogger" Drill.

The "Chicago Slogger" Drill possesses a "punch" and it delivers or gets it across some 400 times a minute. It is a real hard punch, too, one that leaves its impression on the rock every time and yet doesn't hurt the drill. And it is a punch that adapts itself to and is just as effective in the softer rocks as in the hard rocks. That is why it is such a good driller and so popular.

Not only is the "Chicago Slogger" Drill a hard hitting drill, but it is also

a very rapid striking drill. The weight of the blow and the rapidity with which each blow is delivered make it the fast drilling machine users proclaim it to be regardless of the hardness of the rock. But that is what it was designed for, that is, to be a fast driller under all sorts of conditions.

The design of the "Chicago Slogger" Drill is just right and is the result of over twenty-five years' practical experience in all parts of the world. The improved valve motion, the adjustable

shell, the novel method of lubrication, the release rotation, the bushed front head with taper sleeve and the chuck for taking unshanked steels are only a few of the special features that account for it being such a rapid driller.

No better material or workmanship can be desired than is found in the "Chicago Slogger" Drill. Every piece of material has been tested for strength and long wear, and found to be the best for the purpose. The operations in manufacture are the latest standard practice, and the workmanship is consequently of the best. Of course it costs considerable to insure this, but the guarantee under which every sale is made makes it necessary.

Being manufactured on a large scale, the parts that go to make up a "Chicago Slogger" Drill must necessarily be made to the thousandth of an inch to insure interchangeability. And the system of inspection is a most rigid and severe one. An imperfect piece cannot possibly escape rejection, and this applies to the material and treatment of the piece as well as to the workmanship on it. Absolute accuracy is insisted on.

Because designed right and so well made, the "Chicago Slogger" Drill has proven itself very cheap to maintain and operate. The improved valve motion insures low air consumption, and the high-grade special materials used, and the great care taken in their manufacture account for the small "upkeep" costs under the severest hard-rock conditions.

The "Chicago Slogger" Drill permits of a variable stroke when collaring a hole. This is a great advantage and usually a necessity, as it permits setting up and starting a hole regardless of the angle at which the face of the rock slopes. It is also a great advantage when drilling in broken or shattered ground, or when drilling across a seam.

The "Chicago Slogger" Drill is a good "mudder," because it has the right sort of "pull back" power. It clears the bottom of the hole being drilled of the cuttings, which permits of a clean ringing blow against the rock, and accounts in

a measure for the fast drilling records made by it.

The "Chicago Slogger" Drill is built in four sizes, having 2¾-inch, 3-inch, 3¼-inch and 3½-inch diameter cylinders, which allows for a large range of variation in conditions. And each size is just right for the work it is sold for. Neither too heavy nor too light. And they are made for use with either steam or air and mounted on either tripods or columns.

And that is why every "Chicago Slogger" Drill carries with it the hard and fast guarantee of the Chicago Pneumatic Tool Company that it will drill a greater footage at a lower cost for power and repairs than any other drill of equal size, and operating under the same conditions.

Bulletin 151 issued by the Chicago Pneumatic Tool Co., describes in detail the construction and operation of this drill and will be sent on request to those interested.

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#### Complete List of all Boiler, Tank and Stack Manufacturers in U. S. and Canada.

"Manufacturers of tools and materials used by boiler manufacturers wishing to reach over 900 shops in the United States and Canada, manufacturing boilers, tanks and stacks and fabricators of plate steel, should send check for Three Dollars (\$3.00) to F. B. Slocum, Secy., Supplymen's Association, West & Calyer Sts., Brooklyn, N. Y., for a registered copy of the above mentioned book. These lists are also advantageous to salesmen visiting the trade."

---

#### The Cleveland Twist Drill Company Will Send You Drill Chips Free.

Under the modest name of "Drill Chips" the Cleveland Twist Drill Company is issuing monthly a bright, snappy house organ which is sent free to any one interested in drills, reamers, or similar tools. It is edited by Andrew E. Coburn, Advertising Manager.

# IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air  
and Electrical Appliances

BY THE

**IDEAL POWER PUBLISHING CO.**

**1014 Fisher Building**

**CHICAGO, U. S. A.**

C. I. HENRIKSON

Editor

Vol. 11.

MAY, 1914.

No. 1.

## TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 60 cents per year

## ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our  
subscription list.

## Our Motor Truck Department.

The Motor Truck Department of the Chicago Pneumatic Tool Company has grown from the baby of the organization to its second largest department in the comparatively short period of four years.

The "Little Giant" is now firmly established here and abroad being in use in the Dominion of Canada, England, Germany, Italy, Russia, South Africa, Australia, Japan, Hawaii, Cuba and Porto Rico as well as every state in the Union so it is readily perceived that it has become quite an institution throughout the civilized world and it can truthfully be said "The sun never sets on the Little Giant." The Chicago Pneumatic Tool Company has developed from an unknown quantity in the field of commercial vehicle manufacture to the largest manufacturer of one ton motor trucks exclusively, and the fourth largest manufacturer of motor trucks in the United States, regardless of capacity. Needless to say such strides as this could never have been made were it not for the almost boundless resources of the company and a corps of skilled engineers, unequalled in any organization of its kind.

Up to almost a year ago our efforts had been confined to the manufacture and sale of a two cylinder truck, which has met with universal success. During the previous year, however, work had been quietly going on on a

four cylinder car and after months of careful thought and many conferences by our engineers, the model car was completed and put in daily service at our factory as a shop car where it was used for just a year and tried out thoroughly in actual usage under all conditions of load, road and weather. It was then dismantled and thoroughly inspected by the engineering staff who after a few slight changes in the minor details, announced that the new "Little Giant" was then ready for manufacture. Plans were immediately laid to proceed with the manufacture and an extensive advertising campaign was engaged in, and from the first announcement to the truck buying public of the new four cylinder Model "H" "Little Giant" one-ton truck, a flood of inquiries resulted, in such proportions as to cause the Motor Sales Department many a weary hour to keep apace with them and give them the prompt and thorough attention it has always been our aim to afford those interested in any way in any of our products. Each mail brings in its quota of inquiries indicating that the new "Little Giant" has made an unprecedented appeal to the motor-wise business man.

Since the shipment of our first four cylinder model our selling organization has been increased over 70% by the acquisition of new dealers who were quick to perceive the value offered in a car as sturdily and thoroughly built as the "Little Giant" backed by an organization such as ours, and still offered for sale at the phenomenally low price of \$1,350.00.

The sales of Little Giants during the month of January, recognized as one of the worst months of the year in the automobile industry, was the largest month we have ever enjoyed from a sales standpoint, and February and March followed with greater sales due to the near approach of the Spring season and April bids fair to outstrip all previous records.

Our factory is now pushed almost to the limit and if present conditions continue, and there is every indication that they will, it will necessitate putting on

a night shift in order to keep up with the demand.

Judging from all signs, before the end of the season, it will be a mighty small town that cannot boast of a "Little Giant" delivering merchandise for some progressive merchant within its confines.

#### **New Agency in Baltimore.**

The Baltimore News thus announces the appointment of a new Little Giant Truck agency in that city:

"Announcement was made yesterday that the Little Giant Sales Company had taken the agency for the Little Giant one-ton truck, which is made and distributed by the Chicago Pneumatic Tool Company. E. H. Habersham is president and general manager of the Little Giant Sales Company, whose offices and service station are at 1223-1225 Park avenue, near Lanvale street. Mr. Habersham was at one time Washington branch manager for the Studebaker Corporation of Detroit, Mich., and was also sales manager of the Colonial Motor Company of this city.

Mr. Habersham declared today that the Little Giant Sales Company would handle motor trucks exclusively, and would not carry a line of pleasure cars. Mr. Habersham says the motto of the Little Giant Sales Company will be "Service," and service will be uppermost in the minds of him and his sales force when a Little Giant is sold. A big consignment of parts for repairs and replacements has been made the local Little Giant distributor.

The Chicago Pneumatic Tool Company concentrates on one model truck. The company believes that this policy enables them to buy raw stock and parts in large quantities on a most economical basis. Little Giant trucks are guaranteed for one year, and this guarantee is declared to be backed by more than \$11,000,000 of capital and surplus and nineteen years of business that has resulted in bringing to their books many millions of dollars of business each year and more than 22,000 active customers."

#### **The Baseball Bug Gets the Little Giants**

Under the management of Henry M. Tufo, the "Little Giants" of the Chicago Pneumatic Tool Co., have again reorganized for the base ball season of 1914 with the following line-up:

Olson C.  
Burns P  
Hamilton 1st.  
Lovejoy 2nd.  
J. Ostrom s. s.  
W. Ostrom 3rd.  
Hager L. F.  
Roy Beardsley C. F.  
Donofrio R. F.

Games will be played Saturday afternoons, the season opening May 2nd and extending until Aug. 29. The "Little Giants" are members of the Chicago Manufacturers Baseball League, consisting of teams from the following five companies:

Selz Schwab Co.  
R. R. Donnelley & Sons.  
Quaker Oats Co.  
Western Shade Cloth Co.  
Chicago Pneumatic Tool Co.

At the reorganization meeting of the league held at the Windsor-Clifton Hotel recently, Henry M. Tufo was elected president, R. G. Dennis, vice president, and Geo. Bures, secretary-treasurer. A constitution was adopted and a committee appointed to secure playing grounds and draw up a schedule. Three more clubs will probably be admitted to the league to make it an eight club organization.

#### **Announcement.**

The Corby Supply Company, the Southwestern representatives of the Chicago Pneumatic Tool Company, has opened an office in Kansas City, Mo., in charge of Mr. C. A. De Haven.

Mr. De Haven has a wide acquaintance in Kansas City and the surrounding towns, having at one time been master mechanic of the Midland Valley Railroad, and more recently—during the past eight years—being identified with the portable electric tool business.

He is to cover Kansas City, St. Joseph, Leavenworth and Atchison.



A Little Giant in the Service of Ashtabula Telephone Co.

### The Knock of Opportunity.

Any bright little inventor who applies a silencer to pneumatic riveting machines will have a bright future before him.

### Notice.

On April 15th, 1914, our tool repair and shipping department was removed to 239 West 50th Street, New York. Telephone, 1808 Columbus.

Pneumatic or electric tools for repairs should be sent to that address.

CHICAGO PNEUMATIC TOOL CO.,

Office: 50 Church Street.

Telephone, 5050 Cortlandt.

A man from the city went to a small country town to spend his vacation. At the station he took the stage, which was drawn by two dilapidated horses, and found that he had no smaller bill than a five-dollar one, which he handed to the driver.

The driver looked at it for a moment or so, and then said, "Which horse do you want?"

### Little Giant Reduces Trucking Expense to a Frazzle.

Cutting delivery expense from ninety dollars (\$90.00) per month to nineteen dollars (\$19.00) per month is the enviable accomplishment of a Little Giant truck in the service of the Ashtabula Telephone Co., Ashtabula, Ohio. These figures are based on a year's performance, during which time the truck has given the best of service, without any trouble or interruption.

### The Sins of the Father.

Tommy came home from school very morose.

"Well, my son," observed his father cheerfully, "how did you get on at school today?"

Tommy said that he had been whipped and kept in.

"It was because you told me the wrong answer," he added. "Last night I asked you how much was a million dollars, and you said it 'was a hell of a lot.' That isn't the right answer."



Incident at the Grand Prize Race, Santa Monica, Cal.

### The Race at Santa Monica.

Two hundred thousand people saw three Little Giant trucks used as service cars at the Stutz pits for Anderson & Cooper at the Grand Prize race, Santa Monica, Cal., a few weeks ago. There is nothing spectacular about the Little Giant truck, for it is essentially a creature of service, and on this occasion the service consisted of nothing more exciting than carrying the tires and the gasoline for the Stutz cars. But during the race an accident occurred to the Sunbeam car which sent the cold shivers down the spines of the sport lovers, and a Johnny-on-the-spot photographer was able to catch it just as the car turned over. We were fortunate to secure the photo which we reproduce above. Our correspondent does not say how badly the car or its drivers were injured.

### Memories of the Zoo.

"What is the fare to Pretoria, please?"

"Five shillings—I've told you that eight times now."

"I know you have, but little Willie here likes to see you come to the window. He says it reminds him of the Zoo."

### The Real Thing.

The cub reporter saw a hearse start away from a house at the head of a funeral procession.

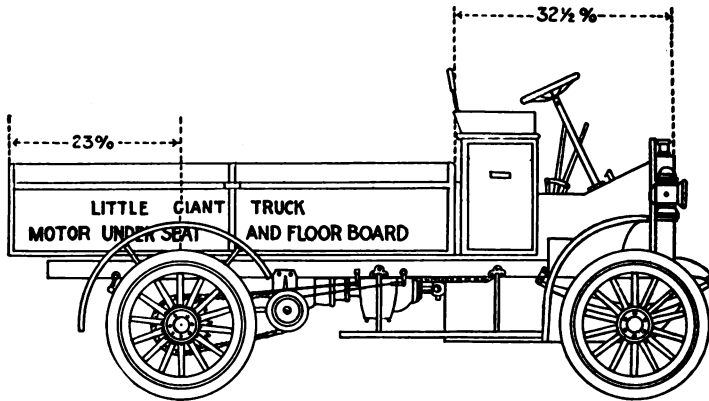
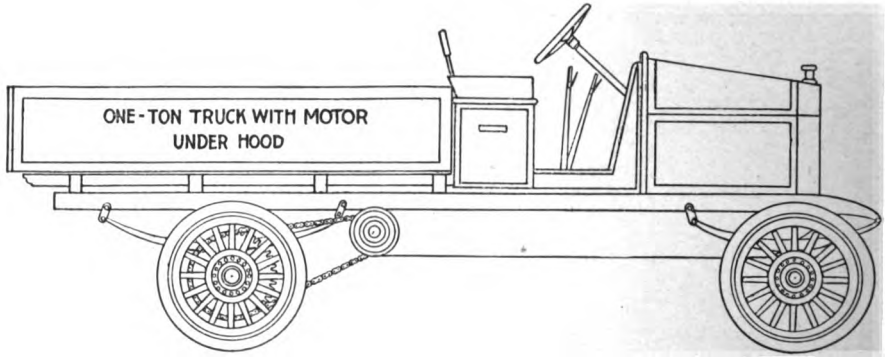
"Who's dead?" he inquired of the corner storekeeper, who was standing near his door, gazing at the conveyances.

"Chon Schmidt."

"John Smith!" exclaimed the cub. "You don't mean to say John Smith is dead?"

"Vell, py golly," said the grocer, "vot you dink dey doing mit him—practicing?"





### How the Load Distribution in the Little Giant Saves Tires.

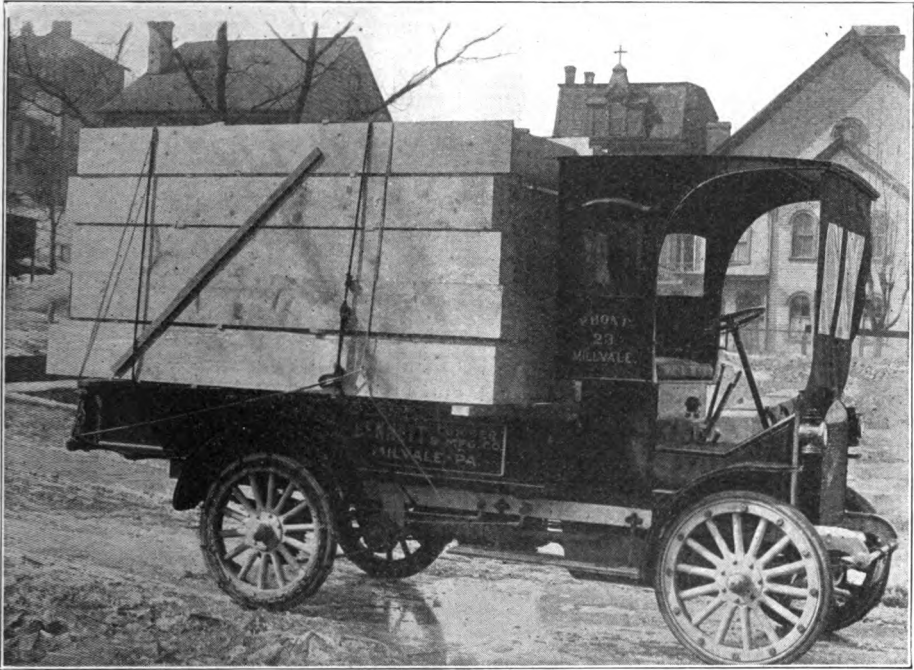
The engine of the Little Giant Car is located under the seat and footboards for the purpose of following out standard wagon practice and load distribution. The total weight of the Model "H" Chassis, stripped of body, is 3,080 pounds; weight on the front tires, 1,000 pounds; on the rear tires, 2,080 pounds. Percentage of load carried on front tires,  $26\frac{1}{2}$  per cent; on rear tires,  $73\frac{1}{2}$  per cent when loaded. The weight carried on the rear axle when car is empty,  $66\frac{2}{3}$  per cent. This construction enables the fitting of the car with the large loading space, or in other words, with body 44 inches wide or wider, 114 inches in length back of the seat with only a 12-inch overhang over the rear of the chassis frame, thus permitting the scientific loading of the car, insuring economical tire mileage. The engine mount-

ed as indicated and the car fitted with removable pressed steel panels, enables any one to have access to all parts of the engine that it is desirable for drivers to reach, or to be reached by any one under ordinary conditions.

Short wheel base permits the turning of the car in much narrower streets without having to back up; the Little Giant being turned in a thirty-five-foot circle, therefore, it is more easily handled in narrow streets and alleys and congested traffic districts.

That short wheel base and proper load distribution mean tire economy is evidenced by the following report on a Model "H" Little Giant sold to Mr. J. C. Kubias of Redlands, Cal., by H. L. Miller, Pacific Coast distributor, located at Los Angeles.

"I took particular pains," says Mr. Miller, "to see how the tires were standing upon this car, and found this car had



Model "H" Little Giant Truck in the service of the Bennett Lumber and Manufacturing Company, Millvale, Pa.

run 5,200 miles, and  $\frac{3}{8}$  inch of the rubber was worn off all four tires even, which is 21 per cent of the rubber, providing a tire could be worn down to the edge of the steel rim. At this rate, if the tires do not cleave they will stand up for 15,000 miles. I have also examined the last car sold to the American Union Fish Co. The tires on this truck are worn about the same amount in city use.

About a month after they bought this truck, they purchased a truck, which has worked at the side of our Model "H," and as you know the — is an overhang car, but has small wheels and large tires, and they have now nearly worn out their second set of tires on the rear wheels. At this rate, I would estimate that the tire bills on an overhang truck would cost fully \$150 more per annum to run than our  $3\frac{1}{2}$ -inch tires on the Model "H."

Mr. Kubias himself has something to say about his truck: "November 20th I purchased from you a Model "H" Little Giant Truck. This truck has been in

hard and continuous service ever since. I use this truck to haul in all of the olives I handle from the groves situated within a radius of 25 miles. Our roads are nearly all rough, mountainous, very crooked and very steep grades. Every day we are compelled to make grades varying from 10 per cent to 18 per cent, with full capacity loads, and we have found this truck always dependable. She is certainly a 'Little Daisy,' and we consider ourselves extremely fortunate in getting such value for our money.

"For an all-round truck for country service, as well as city service, where time and economy are essentials, this Little Giant Model 'H' Truck has them all distanced. It is better than most trucks of double the cost. At an early date I expect to purchase a second Model 'H.'"

The load distribution in the Little Giant and its short wheel base spell tire economy and the success of this truck is due largely to this feature of its design.



This is a view through one of the three naves of Machinery Hall, World's Panama Pacific International Exposition, San Francisco, which has recently been completed. Approximately 8,000,000 feet of lumber was

used in its construction, and twenty-two Little Giant Wood Boring machines were kept busy boring the holes and screwing in the nuts. About 1,500 tons of bolts, rods, plates, etc., were used. W. W. Anderson & Co. were the contractors.



"Chicago Pneumatic" Portable Gasoline Driven Air Compressor and Chicago Hand Drill in the service of the Soraci Contracting Co., New York City, laying pipe lines for water service at 172nd Street and Concourse, New York City.

### What a Little Giant Truck Is Doing in Missouri.

Henry M. Goode, manager of Jess & Sturdy Mfg. Co., Springfield, Mo., agents for the Little Giant truck in that vicinity, sends in the following data on the performance of a Little Giant in that territory:

On return trips load was 300 to 400 lbs.

This truck has traveled approximately one mile, picked up a load of 1,800 lbs. and returned to starting point in 20 minutes. It has backed up a grade of at least 20 per cent with a load of approximately 3,500 lbs.

From.	To.	Load.	Miles traveled, approximately.	Time.	Gasoline used.
Springfield, Mo...	Ozark, Mo., and return.....	1,200 lbs.	33	2½ hrs.	2½ gals.
Springfield, Mo...	Fair Grove, Mo., and 5 miles beyond and return .....	1,200 lbs.	54	3 hrs.	5 gals.
Springfield, Mo...	Brookline, Mo., and return.....	1,100 lbs.	24	1½ hrs.	2 gals.
Springfield, Mo...	Bois d'Arc, Mo., and return.....	1,100 lbs.	28	2 hrs.	2½ gals.

### A Trick of the Trade.

"Stop!" thundered the client at the barber, who was cutting his hair. Then, he continued, in somewhat milder tones:

"Why do you insist upon telling me these horrible, blood-curdling stories of ghosts and robbers while you are cutting my hair?"

"I'm very sorry, sir," replied the barber, but, you see, when I tell stories like

that to my clients their hair stands on end and it makes it ever so much easier to cut."

### Meditations of a Squab.

Forty door-bells, one promise;  
Twenty promises, one call;  
Ten calls, one sale;  
Four sales, one job.  
Lovely!

### A Friend.

A friend is a person who is "for you" always, under any circumstances.

He never investigates you.

When charges are made against you he does not ask proof. He asks the accuser to clear out.

He likes you just as you are. He does not want to alter you.

Whatever kind of coat you are wearing suits him. Whether you have on a dress suit or a hickory shirt with no collar, he thinks it's fine.

He likes your moods and enjoys your pessimism as much as your optimism.

He likes your success. And your failure endears you to him the more.

He is better than a lover because he is never jealous.

He wants nothing from you except that you be yourself.

He is the one being with whom you can feel safe. With him you can utter your heart, its badness and its goodness. You don't have to be careful.

There are many faithful wives and husbands; there are few faithful friends.

Friendship is the most admirable, amazing and rare article among human beings.

Anybody can stand by you when you are right; a friend stands by you even when you are wrong.

The highest known form of friendship is that of a dog to his master. You are in luck if you can find one man or woman on earth that has that kind of affection for you and fidelity to you.

Like the shade of a great tree in the noonday heat, is a friend.

Like the home port, with your country's flag flying, after long journeys, is a friend.

A friend is an impregnable citadel of refuge in the strife of existence.

It is he who keeps alive your faith in human nature, that makes you believe it is a good universe.

He is the antidote to despair, the elixir of hope, the tonic of depression, the medicine to cure suicide.

When you are vigorous and spirited you like to take your pleasures with

him; when you are in trouble you want to tell him; when you are dying you want him near.

You give to him without reluctance and borrow from him without embarrassment.

If you live fifty years and find one absolute friend you are fortunate.—Selected.

---

### Pan America.

Mexico has an area of 767,000 square miles, more than one-fifth of United States.

Brazil exceeds the area of the United States proper by about 200,000 square miles.

Argentina has a climate similar to the United States, and is as large as all of the country east of the Mississippi river plus the first tier of states west of it.

Bolivia is six times larger than New York, New Jersey, Pennsylvania and Delaware.

Four Nebraskas could be put into Chile. Peru is larger than California, Oregon, Washington, Nevada, Arizona, Utah and Idaho.

Paraguay is four times larger than the state of Indiana.

Uruguay is larger than North Dakota.

Venezuela is as large as Texas, Kentucky and Tennessee.

Ecuador is as large as New England, New York and New Jersey.

Colombia has an area as large as Germany, France, Holland and Belgium combined.

---

### Real Hades.

"What's doing in the way of amusements?" asked the newcomer of the old inhabitant of Hades.

"Baseball game every afternoon," answers the old inhabitant.

"Baseball? You don't mean it! That's great! I was a fan from 'way back on earth. On the square, do you have baseball every day?"

"Sure thing."

"By ginger! This place suits me. Baseball! Say, this can't be hell, then?"

"Yes, it is. The home team always loses."



Ever notice how cute a fat woman is?  
\_\_\_\_\_

Cats and candidates love to roost on the fence.  
\_\_\_\_\_

Silence is golden, yet some people won't shut up.  
\_\_\_\_\_

The more the big fellows want the less we little chaps seem to get.  
\_\_\_\_\_

A homely girl can say that pretty things are useless, and mean it.  
\_\_\_\_\_

There is no demand for gold bricks, yet they always find a market.  
\_\_\_\_\_

The morning after is an occasion many a man would be glad to disremember.  
\_\_\_\_\_

A woman's new hat brings more satisfaction to her milliner than to her own husband.  
\_\_\_\_\_

A man doesn't worry because he isn't clever, provided he knows that he's good looking.  
\_\_\_\_\_

Now a scientist comes forward with the theory that red hair keeps a woman's temper hot. Old stuff!  
\_\_\_\_\_

It would surprise the late lamented if he could hear his widow telling her second husband what a noble, kind and generous man the first was.  
\_\_\_\_\_


Nothing jolts an egotist so successfully as being ignored.

Who wouldn't fall short if measured by the golden rule?  
\_\_\_\_\_

Generally speaking, charity is more of a fad than an obsession.  
\_\_\_\_\_

Most of us can't even do our duty without making a fuss about it.  
\_\_\_\_\_

Men who pose as judges of human nature get a good many hard bumps.  
\_\_\_\_\_

He's a fool man who thinks that he can please all his wife's relations.   
\_\_\_\_\_

Some women can smile in the face of adversity just as if they meant it.  
\_\_\_\_\_

If a baby is homely the mother is willing to admit that it looks like her husband.  
\_\_\_\_\_

Many a girl catches the man she wants by pretending to desire some man she doesn't want.  
\_\_\_\_\_

There's only one thing a woman loves better than to be told a secret, and that is to find it out for herself.  
\_\_\_\_\_

The chap who keeps everlastingly at it accomplishes a lot of things that are not necessarily worth the effort.  
\_\_\_\_\_

It's all right to pray for the things you want, but it is advisable to do a little hustling for the things you must have.

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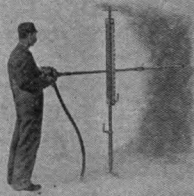
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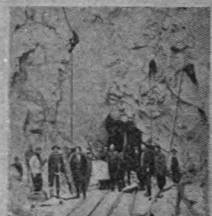
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# IDEAL POWER

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JULY, 1914.

No. 2.

## The "Giant" Low Grade Fuel Oil Engine

A Recent Product of  
The Chicago Pneumatic Tool Co.

More than ten years have passed since we first entered the internal combustion engine field with our type H-SG "Chicago Pneumatic" Gasoline Engine Driven Air Compressor for portable and stationary service in the operation of Pneumatic Riveting, Chipping, Calking and Drilling Tools. Subsequently our Rockford Gasoline Driven Section Car and later our "Little Giant" Commercial Motor Truck were designed and successfully marketed. All of these have gained success by reason of their correct design and the exceptional quality of the materials and workmanship of which they are made.

Realizing the widespread demand existing for a low grade fuel engine, correct in principle and built to endure the severe usage that such engines must withstand, we have employed our broad experience and exceptional facilities in the design and production of the "Giant" Low Grade Fuel Oil Engine, described in the pages following.

The severity of the service and the widely varying degree and quality of fuels employed, impose requirements in an engine of this character that must be met with an intelligent knowledge of service conditions only obtainable through broad observation and thorough tests. Intricate mechanism and delicate

adjustments have no place in an engine for this work.

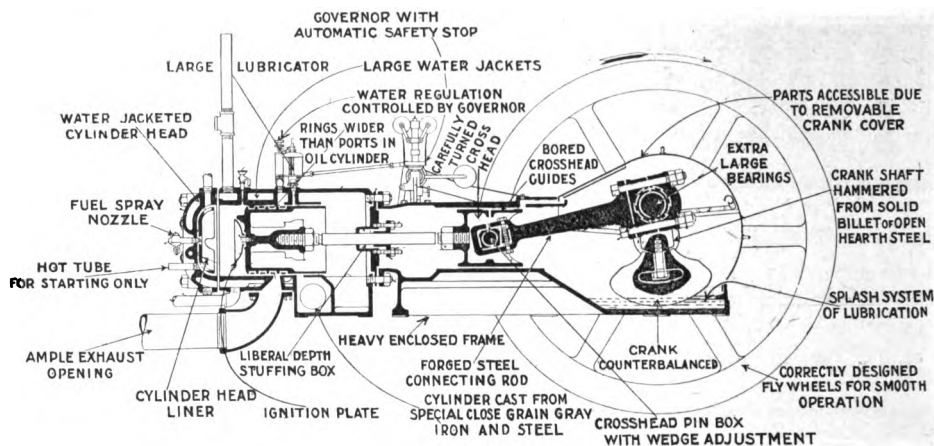
The "Giant" Low Grade Fuel Oil Engine is the result of several years of painstaking development, and we offer it with the confidence that it will share the reputation of our other products.

The Class A-O "Giant" engine will operate successfully on any of the following grades of fuel:

Crude Oil	Engine Distillate
Fuel Oil	Holder Oil
Residium	Coal Oil
Stove Oil	Kerosene
Star Oil	Alcohol
Tops	Motor Spirits
Tar Oil	Naphtha
Solar Oil	Benzol
Gas Oil	Gasoline

It has no valves, gears, carburetors, mixers, oil or air heaters, magnetos, batteries, timers, switches, coils, wires or spark plugs.

The employment of a single cylinder minimizes working parts and their consequent friction. The crosshead construction is extremely important, providing features of advantage over the trunk piston type that cannot and must not be ignored. The crosshead removes from the piston head the angular thrust of the connecting rod with its tendency



Diagrammatic sectional view showing important features of "Giant" Oil Engine. (Reproduced from Bulletin 34-W.)

to wear the top and bottom of the cylinders more than the sides, with a result that oils of a heavy or asphaltum base will work back and under the piston rings, hardening there and causing excessive cylinder wear.

With the crosshead type all bearings are accessible and by compressing in the front end of the cylinder instead of in the crank case, better compression is secured, there being no joints to offer opportunity for leakage and the compression space is greatly reduced. Lubricating oil from the crank case cannot possibly enter the combustion chamber and disturb regulation.

The cylinder of Class A-O engines is of the valveless, two-cycle low compression type. Metal is generously used and is carefully distributed to withstand the stresses of hard service and at the same time maintain castings of as even thickness as possible. Water jackets are cast integral with the cylinders but cover only that portion in which the combustion takes place. This construction simplifies the cylinder casting and facilitates the equalization of temperatures at all points.

Like the cylinder the head is made of the best close grained cast iron obtainable and is a single piece casting thoroughly water jacketed. Studs and nuts hold the head to the cylinder and permit internal inspection of the same at

any time without destroying the gasket.

The trunk type of piston is employed in "Giant" engines and four self-adjusting eccentric spring rings are provided. These are wider than the admission and exhaust ports, cannot catch or break, and effectually secure the compression which accounts for the efficiency of the engines.

The deflector is of a form that has been adopted after exhaustive experimental research and tests; it absolutely insures perfect scavenging of the cylinder at each stroke. This latter result is also due to the relatively high compression obtained in the crank end of our cylinders, this compression only being possible in engines having an airtight joint between the cylinder and frame.

The method of igniting the fuel charge is positive and extremely simple with no delicate parts involved and no sensitive adjustments necessary. A thin circular plate is rigidly secured to the piston, and after the engine is started fuel injected against the hot plate is instantly gasified and ignited. By this system air only is compressed in the cylinders, the fuel is injected at the proper time and high sustained operating economies are possible.

A fuel pump of simple construction is used.

The method of regulating the stroke

of the pump plunger is extremely efficient and meets all conditions imposed by widely varying loads. A cam under the control of the governor rests against a collar on the plunger rod, the position of the cam determining and regulating the stroke of the pump and consequently the quantity of fuel injected. A hand-operated lever, also acting upon the plunger, is provided for stopping the engine.

The fuel nozzle is a combination ball check valve and nozzle, is made of bronze and screwed into the center of the cylinder head. It can be quickly replaced and can be cleaned without removing from the cylinder.

The value of a proper quantity of water mixed with the fuel in the combustion space has long been recognized, but the attempts to utilize it and to efficiently regulate the quantity to suit the varying fuels and loads have not in general been satisfactory.

The water regulator of the Giant A-O engine is nothing more than a needle valve, which is at all times under the control of the governor and automatically varies the admission of water to meet load requirements. By thus proportioning water supply to the quantity of fuel injected we are able to obtain an appreciable increase in power and economy, to prevent overheating of cylinder head and burning of the lubricating oil, to eliminate shocks in the engine and to ensure freedom from carbon deposits.

The frame is completely enclosed, and removable oil tight covers for the side and crank case give ready access for inspection of parts and necessary adjustments. The pleasing lines, strength and solidity of the frame are apparent.

Main bearings are of extra large proportions, are cast integral with the frame, and well supported by a proper distribution of metal. They are of the diagonal box type, lined with the best grade of Babbitt metal and provided with grooves for the conveyance of oil. Necessary means of adjustment of the bearing caps to compensate for wear are provided.

Oil caps are cast on the frame and caps and serve to catch and return to the interior of the frame any oil leaking through the bearings.

The crank shaft is of the center crank type, made of the best open hearth steel forging, and of exceptionally liberal proportions throughout. Adequate counterbalance weights are provided, these insuring steady operation of the engine at the highest speeds.

Connecting rods of "Giant" engines are not cast, but are of the best steel forgings procurable. The wrist pin end is of the solid type, fitted with bronze boxes, while the crank end is of the marine type, lined with the best grade of Babbitt metal.

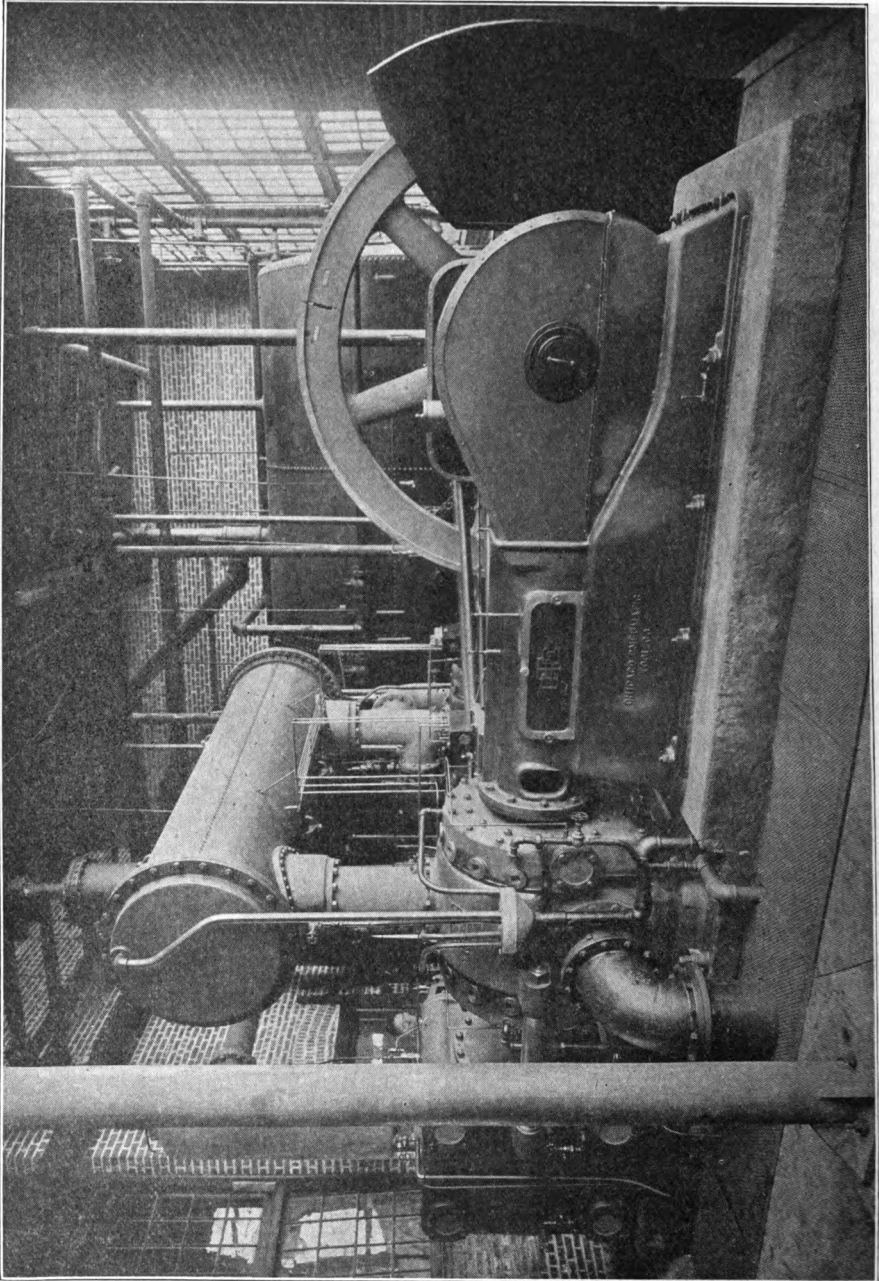
Fly wheels are of extra large diameter to facilitate starting, and are of sufficient weight to ensure steady operation. For the smaller sizes there is furnished a plain belt pulley and for the larger sizes friction clutch pulleys, which may be bolted to the arms of either fly wheel.

All of the smaller engines may be readily started by hand, but for the largest size and for the smaller, when desired, we provide a small vertical single-acting air compressor, which is driven from a pulley bolted to the fly wheel. This compressor delivers air to a storage receiver, suitable for 150 pounds working pressure, and a lever-operated air starting valve permits running the engine on air until firing of the fuel charge begins.

A sight feed oiler of ample size is furnished for the cylinder. A force feed lubricator is provided when specially ordered.

These engines are built in four standard strokes, 8, 10, 12 and 14 inches of 12, 18, 25 and 45 Brake horse power, respectively. Also built in Duplex or Twin construction in 24, 36, 50 and 90 Brake horse power, respectively.

One of them, of the 25 horse power size was used to operate a Type N. S. B., "Chicago Pneumatic" compressor, which furnished the compressed air for the M. C. B. and M. M. convention recently held at Atlantic City.



Type M-CSC "Chicago Pneumatic" Compressor installed by the Chicago and Alton Railway at Glenn, Ill.

### Up To Date.

Smith's typist wore these lacy waists  
And skirts like gauze—but tighter.  
I said to Smith: "I see you have  
A vis-ible type-writ-er."

### Wasted.

"Did the doctor tell you what you  
had?"  
"No. He took what I had without tell-  
ing me."—Life.

### Chicago & Alton Railway Installs 2,000-Foot "Chicago Pneumatic" Corliss Compressor.

The "Chicago Pneumatic" Corliss compressor shown on the opposite page is a Type M-CSC machine, having compound steam and two-stage air cylinders of the following dimensions:

High pressure steam.....	17 inches
Low pressure steam.....	28 inches
Low pressure air.....	25 inches
High pressure air.....	15 inches
Length of stroke.....	22 inches

This unit which is the smaller of two recently purchased by the C. & A. Railway, accurately reflects the present state of the art of manufacturing Corliss compressors and is typical of the "Chicago Pneumatic" Class M steam machines.

While electric-driven units are in general rapidly replacing steam-driven compressors, in many cases efficient steam plants make the installations of Corliss units highly desirable provided such machines are designed for high economies and operate at higher speeds than have heretofore prevailed.

The compressor illustrated has a rated displacement of 1,998 cubic feet per minute, at 160 R. P. M. at which speed it will attain practically the same low water rate as is obtained with a standard slow moving Corliss power engine of equivalent size operating under the same conditions.

With this economy this machine also combines large capacity for a given weight and floor space, totally enclosed construction, automatic lubrication and effectual regulation with a simplified valve gear.

These Corliss compressors are manufactured in capacities of 1,500 to 2,500 cubic feet per minute and owing to the distinctive features briefly described above are very adaptable to railroad shops, machine shops, foundries, mines and other industrial plants where large economical steam compressors can be utilized to advantage.

### A New Type of Air Compressor.

The air compressor which furnished compressed air for the M. C. B. and M.M. convention exhibit at Atlantic City was one of the latest type developed by the Chicago Pneumatic Tool Company, and known as their Class N. S. B. It was operated by a "Giant" fuel oil engine.

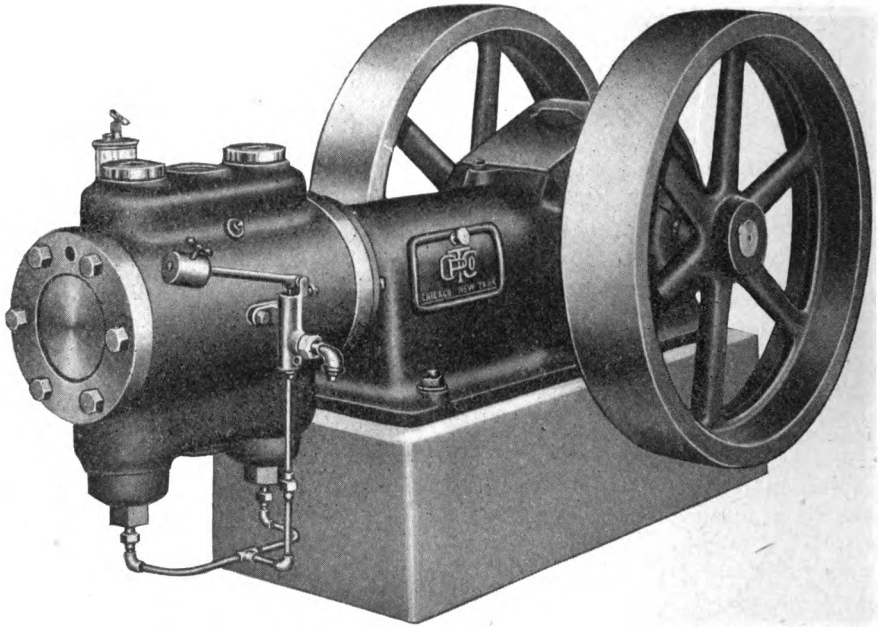
In this type of compressors, the frame is completely enclosed, and removable oil tight covers for the side and crank case give ready access for inspection of parts and necessary adjustments.

Main bearings are of extra large proportions, are cast integral with the frame and well supported by a proper distribution of metal. They are of the diagonal box type lined with the best grade of Babbitt metal and provided with grooves for the conveyance of oil. Necessary means of adjustment of the bearing caps to compensate for wear is provided.

Oil lips are cast on the frame and caps and serve to catch and return to the interior of the frame any oil leaking through the bearings.

The air cylinder is made of the very best cast iron, is designed so as to permit of reborring with safety, and together with the heads is completely water jacketed. Piston is carefully fitted and is provided with two cast iron spring rings.

The valves are the heart of an air compressor and the value of many an otherwise good design is nullified by the attempts to employ older types of valves at the speeds demanded by present day practice. The results of years of practical experience and prolonged tests under severe conditions are reflected in "Simplate" flat disc type of inlet and discharge valves. These are set radially in the cylinder, are arranged to give a minimum clearance and afford a higher volumetric efficiency than is usually obtainable with small compressors. No cages are employed and the openings for air are consequently very large and direct. This feature eliminates the necessity of lubrication and assures a minimum power consumption to discharge air from the cylinder.



Type N-SB Belt Driven "Chicago Pneumatic" Compressor fitted with Simplate valves.  
(Reproduced from Bulletin 34-N.)

The valves being designed for high speeds are naturally very light, but specially selected materials and small lift combine to render them practically indestructible. They are guaranteed against defects or breakage for a period of three years.

The crank shaft is of the center crank type, made of the best open hearth steel forging and of exceptionally liberal proportions throughout. Adequate counter-balance weights are provided, these insuring steady operation of the compressor at the highest speeds.

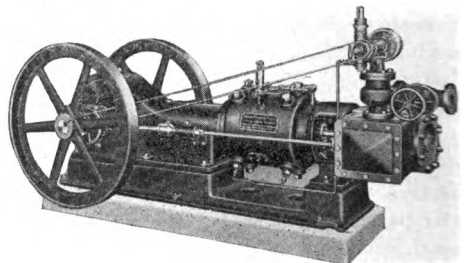
Connecting rods of Class N Compressors are not cast, but are of the best steel forgings procurable. The wrist pin end is of the solid type, fitted with bronze boxes, while the crank end is of the marine type lined with the best grade of Babbitt metal. No better rod is obtainable.

Friction and wear are reduced to a minimum and heating and cutting of bearings absolutely prevented through the medium of a positive self oiling system of lubrication for the main bearings,

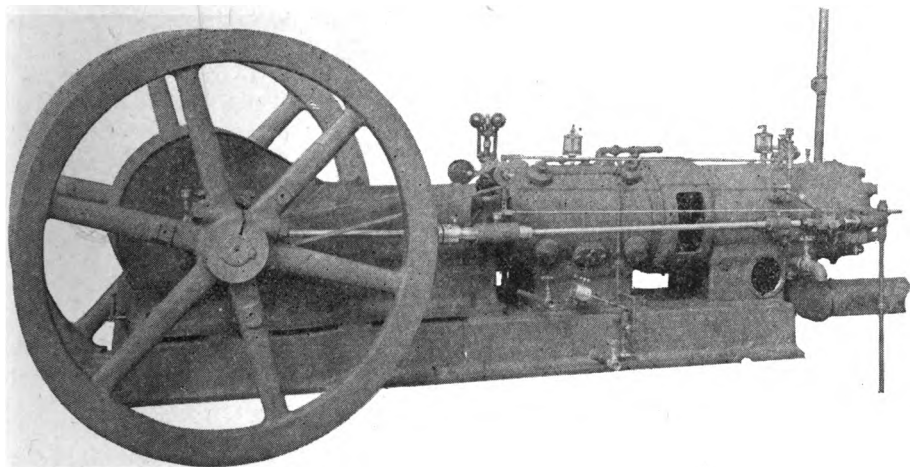
crank and cross-head pins and cross-head guides. The enclosed frame allows oil to be carried at a sufficient height in the case to enable the crank and connecting rod to dip at each revolution, this action splashing oil into distributors to every bearing. Lubrication is positive and copious regardless of the speed.

Sight feed oilers of an ample size are furnished for the steam and air cylinders.

Both steam and belt driven machines of this type are equipped with a simple unloading mechanism by means of which the air inlet valves are held from their seats when the desired received pressure



Type N-SS Steam Driven "Chicago Pneumatic" Air Compressor.



Type N-SO "Chicago Pneumatic" Air Compressor, combining the power cylinder of the "Giant" Engine with the air cylinder of the new Type N with Simplate Valves.

is obtained. This relieves the compressor of all load and proportions power consumption to air capacity requirements.

Steam compressors are provided with a combined speed governor and air pressure regulator of approved design, this automatically controlling the speed of the machine in accordance with the demand for air.

Class N-SB and N-SS compressors are built in five standard strokes, 6-8-10-12 and 14 inches of capacity from 40 to 550 cubic feet per minute.

#### **A New Low-Grade Fuel Oil Engine-Driven Compressor.**

In their new type N. S. O. compressors the Chicago Pneumatic Tool Co. have combined the power cylinder of their Giant fuel oil engines and the air ends of their Type N compressors with Simplate flat disc valves, both of these being described elsewhere in this issue. In general, they are built on the well known lines of the "Chicago Pneumatic" gasoline-driven compressors and are adaptable to stationary, semi-portable or portable use.

Combining as they do extreme simplicity with rugged construction, large

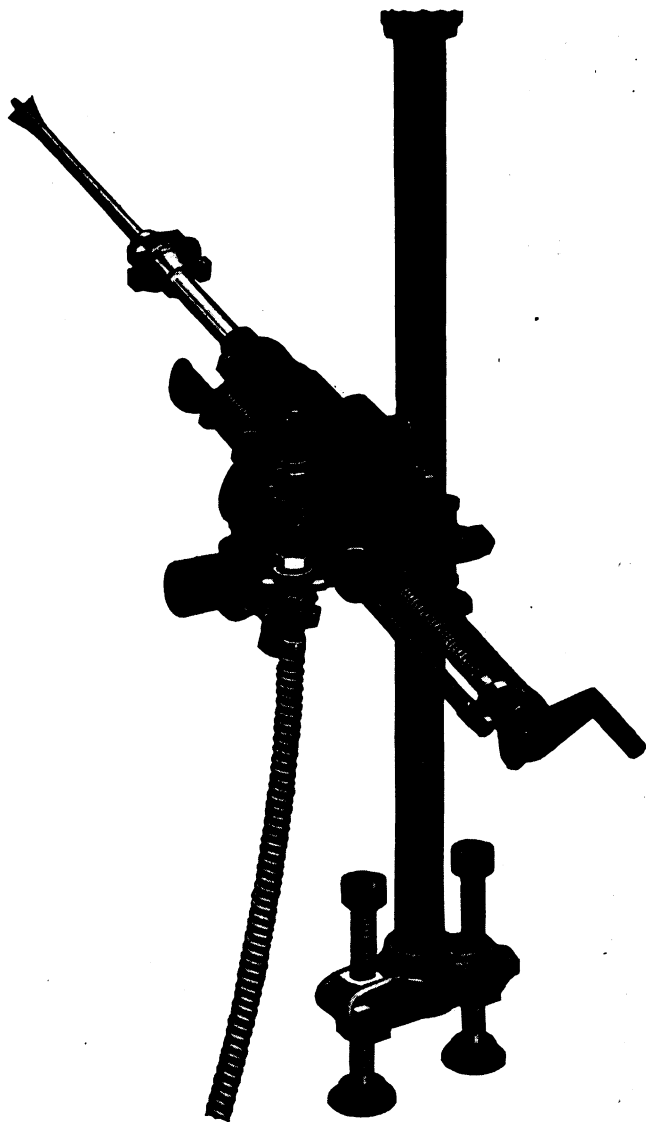
capacity and low sustained operating costs, they are particularly to be recommended for mines, railroad construction work, laying of water, gas and sewer mains, general field work of contractors, water pumping and the numerous other uses for which a reliable and economical compressor can be employed.

Their adaptability to any fuel oils above 28 degrees Baume, together with the enclosed construction, automatic lubrication and regulation and freedom from the necessity of expert attendance enable these machines to meet the requirements of many services which have formerly precluded the satisfactory employment of compressed air.

Engineers contemplating the installation of large steam or electric-driven units will benefit by investigating the possibilities of applying multiple compressors of the fuel oil engine-driven type and will appreciate the flexibility, low cost of operation and freedom from the danger of a complete shut down which is obtainable in such a battery.

These compressors are offered in four standard sizes in strokes of 8, 10, 12 and 14 inches, with capacities from 70 to 300 feet. Bulletin 34K fully describes them.





"Chicago Gatling" One-Man Drill mounted on column.

#### The "Chicago Gatling" Drill.

The "Chicago Gatling" drill is what its name implies—the most rapid striking and hardest hitting drill yet invented—a real Gatling. Striking 600 to 750 blows per minute, like so many bullets, and with each blow absolutely uncushioned, it has a penetrating power hard to conceive—a force which nothing out-

side of hardened armor plate seems able to resist.

And the marvel is that with all its power it only weighs 145 pounds, which places it in the one-man drill class—that is, it is light enough for one man to handle alone. But it is not only the light weight of the "Chicago Gatling" drill which warrants this classification.

It is more particularly a one-man drill because of its freedom from breakdowns—its uninterrupted activity.

Furthermore, this "Chicago Gatling" drill is unlike others in that its drilling efficiency shows a constant score of 100 per cent. It starts doing 20 to 25 per cent better than its best competitor and then keeps on getting better while others are falling off. There is a very good reason for this.

The secret of the extraordinary speed and hard blow of the "Chicago Gatling" drill lies in its heart—that is, the valve. A hollow steel ball, hardened and ground, weighing only two ounces and with a travel of only one-eighth of an inch is the secret. The common knowledge that the lighter the valve and the shorter the travel the better the drill is certainly proved in this case.

It is the hollow steel ball acting as a valve which causes the "Chicago Gatling" drill to do such good work that users say it beats other machines easily by 25 per cent. Two ounces of hardened steel in the form of a hollow ball acting as a valve and traveling only an eighth of an inch each way is responsible for this. Other valves weighing four to ten times as much and traveling many times farther necessarily move slower and drill less.

One of the many big things about the "Chicago Gatling" drill is that dirt in the air cannot stop it or even hurt it. The steel valve cage acts as a screen for the large particles and there is no place for the smaller ones to lodge, as both the ball valve and the seats are "air washed" six or eight hundred times a minute. And once in the cylinder the dirt is almost immediately swept out into the atmosphere through the large exhaust ports in the wall of the cylinder.

Every "Chicago Gatling" drill carries with it the company's guarantee on the hollow steel ball valve—it is a guarantee against either wear or breakage for a whole year. This guarantee, of course, is only made because the valve is not only indestructible, but also wear-proof. And it means a saving to the user of at

least \$50 a year. Besides it makes for better drilling speed.

The "Chicago Gatling" drill is so speedy a driller and so economical in maintenance cost because it strikes an absolutely uncushioned blow. Traveling towards the bottom of the hole being drilled, at an unusually high speed, there is nothing in its path except the rock, which it strikes the hardest kind of blow. There is nothing to deaden or soften the blow. And yet the machine is so well balanced that the piston comes back on the return stroke without a perceptible stop and with practically the same power. That is why it cuts so fast.

A most remarkable feature of the "Chicago Gatling" drill is its powerful "pull-back." It accounts for the faster speed just as the absence of a cushion accounts for a harder blow. Most drills are weak in this respect and that partly accounts for their lower drilling capacity. The hollow steel ball is, of course, responsible for this. It throws quick and at just the right time. And nothing can prevent its doing this.

The action of the hollow steel ball valve of the "Chicago Gatling" drill is positive—and from a drilling point of view it is so well timed that it may be called perfect. Its light weight of two ounces, its short valve travel of only an eighth of an inch and the quick, sharp exhaust directly into the atmosphere without passing through tortuous or restricted ports account for the high drilling efficiency.

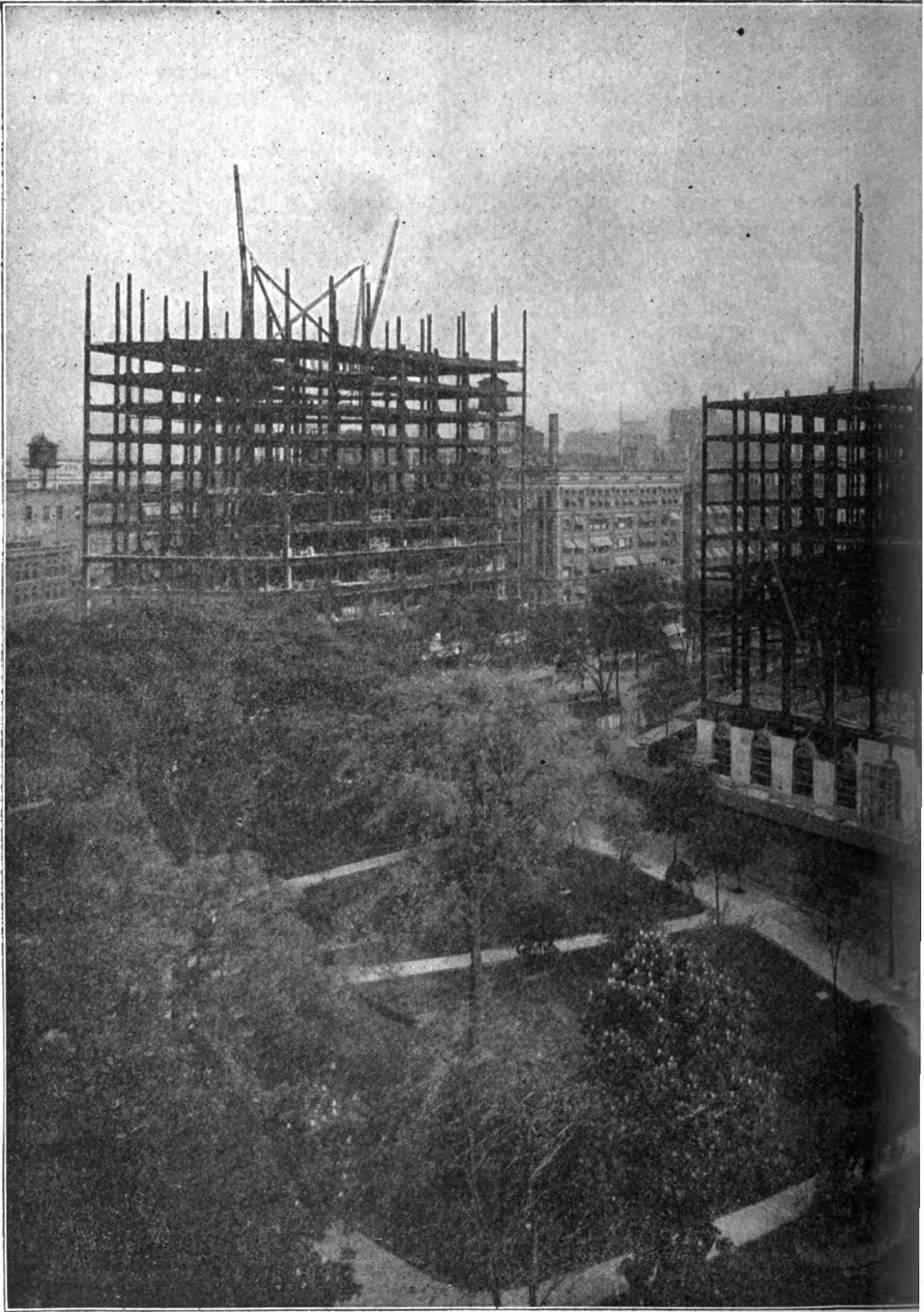
We could go on and tell you a great deal more about the "Chicago Gatling" drill but we want you to read Bulletin 152 on the subject, which tells all about it. It's worth reading if you use or are likely to use rock drills or if you are interested in any way whatever.

#### A Wrong Diagnosis.

Physician—"From a hasty examination, I am of the opinion that you are suffering from clergyman's sore throat."

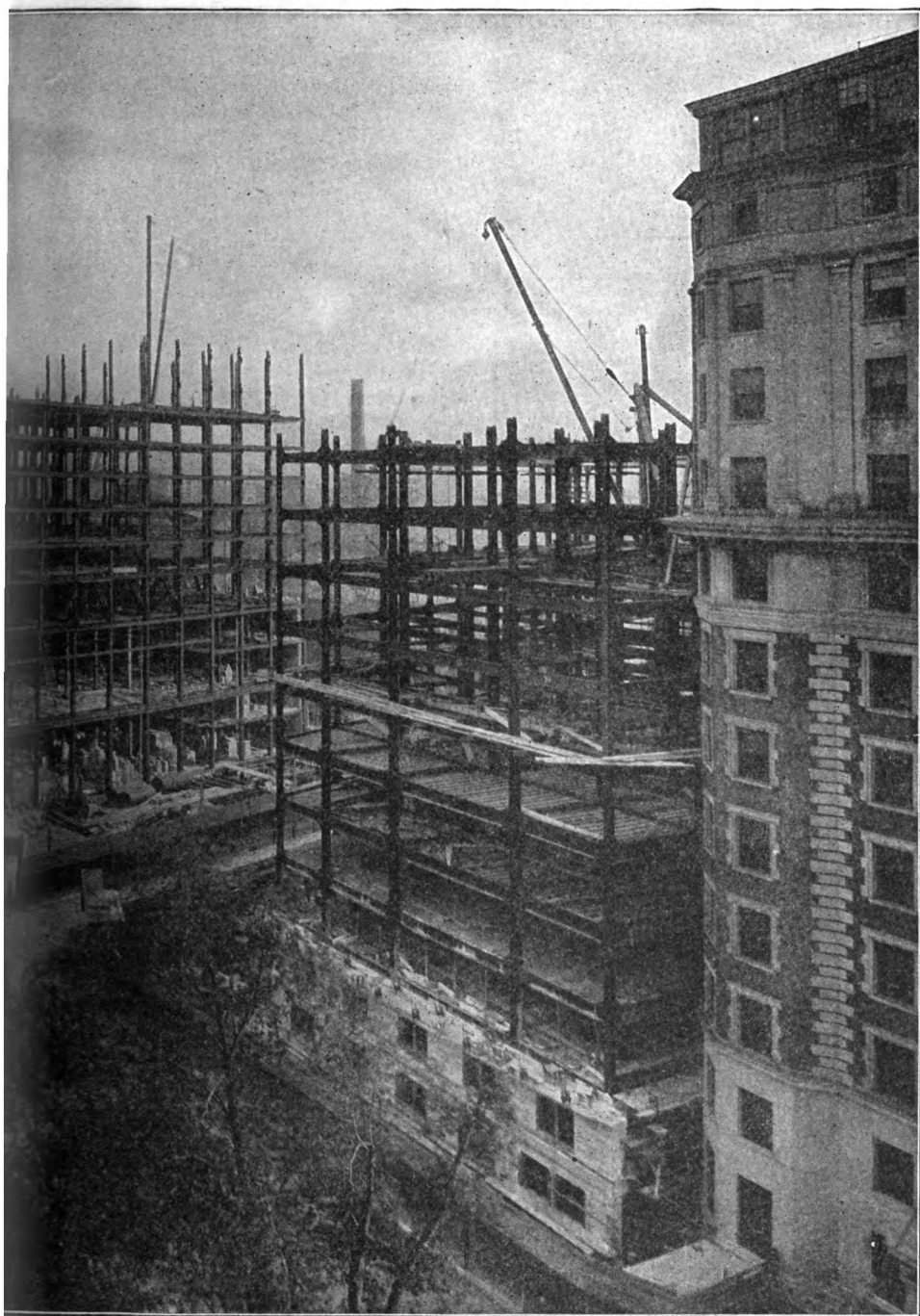
Patient—"The hell you say!"

Physician (quickly)—"But it is quite possible I am wrong—I will look again."



WHAT CAPITAL AND ENTERPRISE WITH THE AID OF PNEUMATIC TOOLS ARE DOING IN THE CITY OF DETROIT.

These four buildings (three under construction—one just completed) encircle Grand Circus Park, Detroit, and are being built with Chicago Pneumatic Tools exclusively. At the left



the New Whitney, being erected by Lanquist and Illsley. In the center is the new Hotel Statler, being erected by James L. Stuart. At the right is the new addition to the Tuller Hotel, being erected by Geo. A. Fuller Co. The picture was taken from the top of the Kresge Building, just completed by Geo. A. Fuller Co. Each of these buildings is 18 stories high.

# IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air  
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.

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CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

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## TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 50 cents per year

## ADVERTISING RATES ON APPLICATION

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## Notice.

Readers of Ideal Power who are desirous of obtaining more information on the subjects brought up in this number are invited to fill out and return the enclosed postcard. No obligation is attached and we shall deem it a special privilege to forward, on request, any literature that may be suggested by the articles in this issue.

## Chicago Gatling Does Fine Work.

One of the western agents of the Chicago Pneumatic Tool Co. reports an interview with a prominent tunnel foreman of Clear Creek, Utah, who has in operation some 7 or 8 rock drills, and who tried out a C 22 Gatling Drill: "This drill was not sent to him with the idea of his purchasing it; I simply sent it to him to get a valuable report from a man whom I consider to be the best tunnel man in Utah. I have already sent you the letter which he wrote me, and in conversation with him he states that he is sure that this is the fastest piston drill in the world; that he drilled an 8 ft. hole, using heavy steel such as is ordinarily used in the 3¼" drill, in seven minutes."

## A New Use for Compressed Air.

There is nothing new about compressed air cleaning, but there is something novel about a compressor installation, when its prime purpose is the cleaning of furs in department stores.

The Jordan-Marsh Co. of Boston have recently installed a "Chicago Pneuma-

tic" Type N. S. S. compressor with Simplate valves for the sole purpose of blowing the dust, dirt and moth eggs out of their extensive stock of costly furs. Other big stores in Boston have become interested and are considering similar installations.

In cleaning furs with compressed air a nozzle is used having a 1/64 inch opening about 4 to 6 inches long and this is run over the fur to dislodge the dirt and eggs, which it does without injury to the fur:

The compressor is installed in the basement and the air piped to the fur department, where several outlets are provided for easy access.

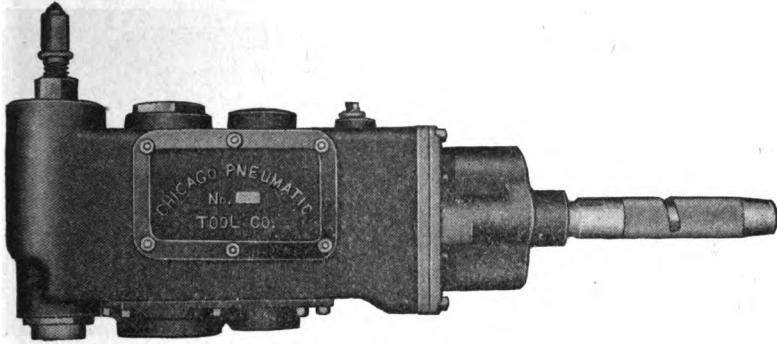
## Announcement to Users of "Chicago Pneumatic" Compressors.

One of the foremost features of proven merit and permanent value, introduced in our new line of enclosed self-oiling compressors, is our patented "Simplat" automatic air inlet and discharge valve of flat disc type.

These "Simplat" valves are interchangeable with all poppet valves of earlier design, employing cages, of our manufacture. The substitution of these "Simplat" valves for the older poppet valves will increase the efficiency and decrease the power consumption of your compressor.

Designed primarily for high speeds, the valves proper are very light with large areas combined with small lift. Specially selected and treated materials render them practically indestructible. No cages for guiding the valves are required and silent operation at the highest speeds is possible without lubrication. The design is such that the valves cannot stick or fall into the cylinder. We guarantee them against defects or breakage for a period of **THREE YEARS.**

Inquiries or orders are respectfully solicited and should give the shop number of the compressor (which will be found on the name plate) and state whether inlet or discharge valves or both are desired.



Little Giant Chain Driven Corner Drill. (Fully described in Bulletin 127, Second Edition.)

### Boyer Pneumatic Riveters Salute Chicago Commerce Boosters.

Just to prove that none of its rivals could exceed it in enterprise, Augusta greeted the men of the trade extension delegation of Chicago with a rap-a-tap of pneumatic riveters early one morning recently. The acquaintanceship promoters on board the Association of Commerce special doing the big loop through Dixie were looking for quiet here that they might find repose after their strenuous week of travel visiting eleven cities, but the Boyer Hammer wouldn't let 'em.

### Special Convention Notice.

The committee of arrangements of the Supplymen's Association of the A. B. M. A., of which Mr. Thos. Aldcorn of the Chicago Pneumatic Tool Co. and Mr. F. B. Slocum of the Continental Iron Works are chairman and vice-chairman, respectively, are planning an elaborate form of entertainment to the members and guests of the American Boiler Manufacturers' Association at the 26th annual convention to be held in New York City Sept. 1 to 4, inclusive. A preliminary meeting was held at the Waldorf Astoria, May 12, and the regular committee meeting will be held June 2 at the Waldorf, at which time it is hoped a large number of the local supplymen will join hands with the committee in formulating plans for entertainment at the convention.

### New Chain Drive Corner Drill.

The Nos. 18 and 19 Little Giant Corner or Close Quarter Drills were designed to overcome the objection arising from the intermittent action of ratchet levers in the rotation of the spindle, which is a prominent feature of the close quarter drill now on the market. In the Little Giant Nos. 18 and 19, steady, uninterrupted revolution of the drill spindle is accomplished by means of an endless silent chain. In adopting this new feature all the advantages of the ratchet type have been retained, permitting the drill to be used in the same narrow space, and within  $1 \frac{7}{16}$ " of the end wall or corner.

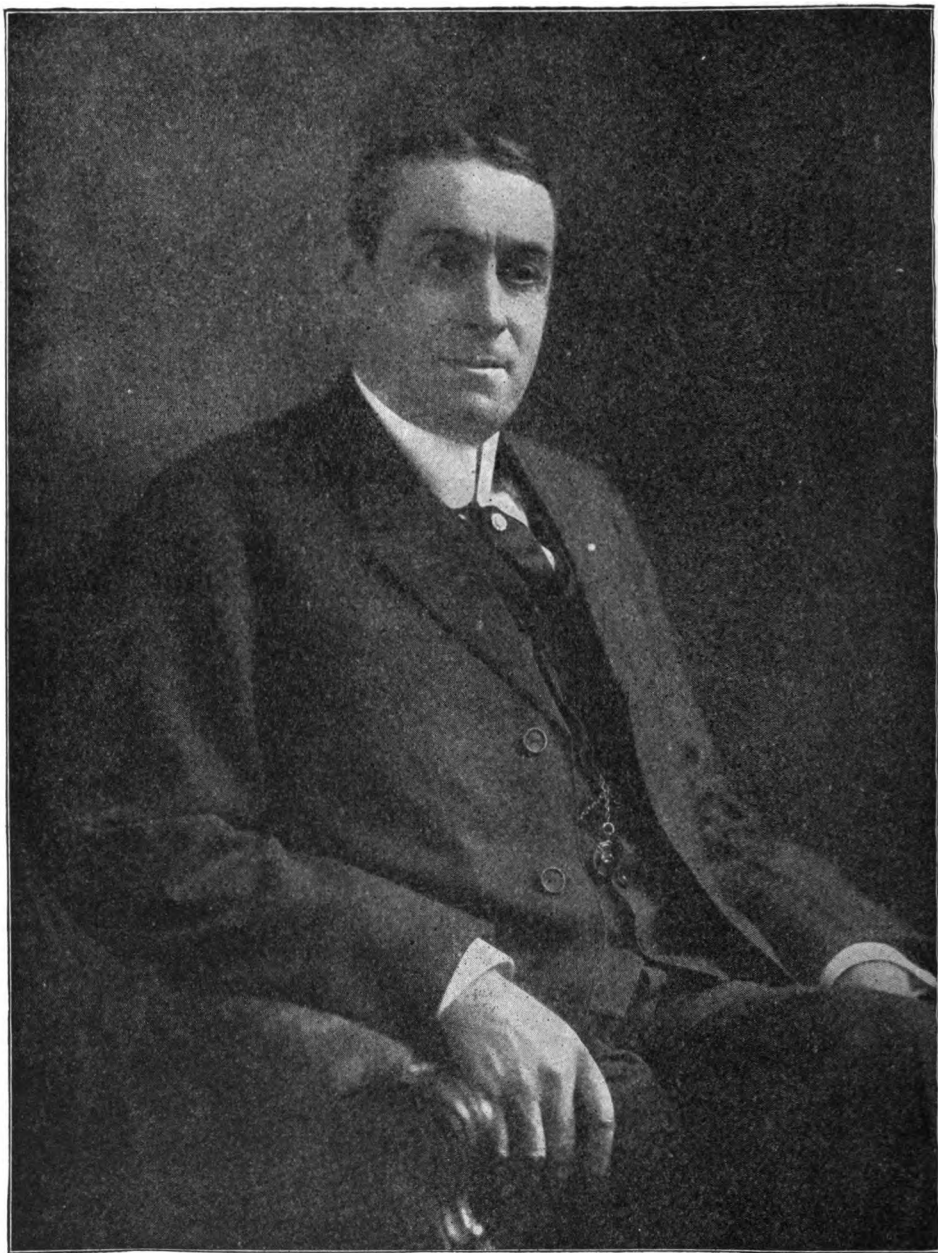
In the chain driven type of corner drill there is much less vibration than in the ratchet type owing to the steady pull of the chain, and the wear and tear on the machine is proportionately less.

Removable crosshead guides insure alignment and can be replaced with new ones when worn, which is a decided advantage over crosshead guides cast solid and integral with the case.

All bearings are either of the annular or roller type, each used where it will best serve the purpose.

Little Giant chain driven corner drills are made in two sizes and capacities, the No. 18, fitted with No. 3 and the No. 19 with No. 4 Morse taper socket.

For further details see table on page 40 of Bulletin 127 (second edition), issued by the Chicago Pneumatic Tool Co.

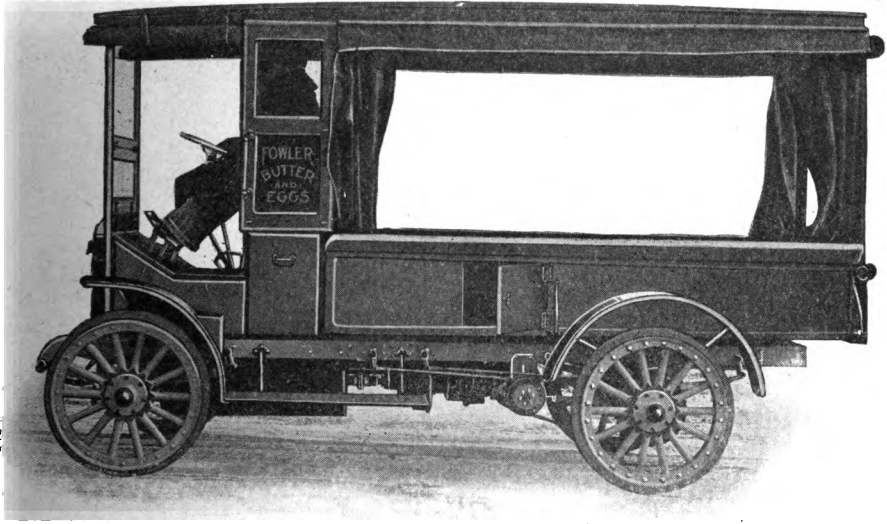


**MR. THOMAS ALDCORN.**

General Eastern Sales Agent Chicago Pneumatic Tool Co.

Mr. Aldcorn is one of the pioneers in the pneumatic tool industry, having been with the Chicago Pneumatic Tool Company since the earliest days of the company. Many of our readers know him personally and will be delighted to see this good likeness of him. Mr. Aldcorn's address is 50 Church Street, New York City.





#### REFRIGERATOR.

This Little Giant has a "Special Four Post Canvas Top Body," 44"x114", equipped with metal ice container to carry dairy products under refrigeration, furnished with side doors to permit of easy access to ice box. Upper portion of body used for carrying eggs or other product. This car is the property of M. E. Fowler, 4515 Wallace Street, Chicago.

#### Motor Truck Efficiency Briefly Stated.

The economic considerations that enter into the substitution of motor trucks for horse transportation in practically every line of commercial enterprise goes deeper than most people would think, probably. That the removal of horses from city streets tends to cleanliness, to sanitation and to more efficient handling of congested traffic; that motor trucks, by their greater speed and endurance, broaden their owner's selling territory beyond what can be reached by horse service; that motor operation is more economical than horse operation, all these things are recognized, in a general way, by business men, says the American Carpet and Upholstery Journal.

The necessity of stabling horses near their work to save both time and strength going to "the job" and returning from it means a constantly increasing expenditure for housing. For in cities, and even towns, stables frequently must be located in districts of fast-raising property values. The motor truck, on the other hand, suffering no weariness of the flesh, and having from

twice to six times or even more the speed of the horse, can be housed at any distance from its working base that may be desirable for economy. Furthermore, the garage is not the unsanitary nuisance that the horse-stable is; and as a single motor truck, properly used, will do the work of from three to six two-horse teams, it is fair to calculate that the motor truck equipment required for a given amount of work will occupy no more than one-fifth the floor space required for horse equipment. This allows for the space occupied by wagons, horses, feed and so on.

Horses that are used carefully will not work more than 50 per cent of the working days of the year. It is possible to get 75 per cent of the working days out of a horse, but this is done at the expense of his endurance; he wears out more quickly. And in 90 per cent of the year's working days the motor truck will work practically twenty-four hours a day, if necessary; that is to say, it has no moods; it is never "half sick" and so to be coddled. When it is in commission, it is up to full efficiency the whole time.





This Little Giant is delivering meats in Havana, Cuba. It has a special straight panel body, 48"x108"x60" high, lined with matched lumber which is covered entirely by galvanized sheet iron and equipped with hooks inside at front and side to carry fresh meats.

**The Troy Laundry, Salt Lake City, Uses  
a Fleet of Little Giants and This  
Is What They Say:**

Replying to your inquiry of the 24th instant as to the results we have been obtaining from the "Little Giant" Trucks purchased from you, we are pleased to state that we purchased one Model "D" car from you July 1, 1913, after having it demonstrated to us and on July 14, 1913, we placed our order for four more Model "D's" and one Model "F."

These cars have been on constant daily operation since they were delivered to us and the results obtained from them have been very satisfactory.

We have not been to any expense for repairs owing to defective material or workmanship. The cars are simple to handle and our drivers have no difficulty whatever in learning to run them.

We have found them to be economical both in fuel consumption and maintenance. We have also passed through the winter months and muddy season with less trouble than we anticipated.

In closing we desire to state that we are well pleased with our "Little Giants" and would not hesitate to recommend this car to any prospective purchaser.

Yours very truly,

**TROY LAUNDRY,**

By J. H. Brown, Mgr.

**What the Borough Municipal Electric  
Works, Wallingford, Conn., Think  
of Little Giant Trucks.**

Replying to your recent letter regarding our opinion of our auto delivery truck, we have used automobile delivery trucks since 1906 and would not think of getting along without them. At the present we have in service two trucks and one runabout. Our lines extend approximately  $3\frac{1}{2}$  miles in each direction. We cover much very hilly country. We have had no serious trouble, and find the autos much cheaper and more suited for our work than horses.

We purchased one of the first models made by the Chicago Pneumatic Tool Co. of Chicago, Ill. This truck has been in constant use by our line department.



It has been driven and cared for by the linemen, doing the heaviest kind of work and receiving much indifferent care and attention. It is giving us as good service now as the first year. Last year we purchased one of the latest models and have been well pleased with it. This truck we hold as an emergency truck. This truck is of much more rugged design and construction, and as nearly fool proof as possible to make a truck of this type.

We consider this truck one of the most dependable made and cannot recommend it too highly or our business dealings with the makers.

Very truly,

(Signed) A. L. PIERCE,  
Supt. & E. E.

### Do You Know Her?

It was the custom of the congregation to repeat the twenty-third psalm in concert and Mrs. Armstrong's notion of joining was to keep about a dozen words ahead all the way through.

A stranger was asking one day about Mrs. Armstrong.

"Who," he inquired, "was the lady who was already by the still waters while the rest of us were lying down in green pastures?"

### The Little Giant and Votes for Women.

Miss Mary Brennan of Seattle and Mrs. Mary K. Glagett, clad in white suits and wearing the suffrage colors, carried huge posters and pails of sloppy paste and covered every inch of available poster space in Washington, D. C., with bills announcing the suffrage parade, in support of the Bristow-Mendell constitutional amendment, on May 9.

They wanted to produce an impression. They wanted to strike a popular note. They decided the Little Giant was the truck for them and it made good. We are indebted to *Leslies' Weekly* for the cut.

### Hog in No Hurry.

A Southerner, riding through the White mountains, came up with Mr. Shaw leisurely driving a herd of pigs.

"Where are you driving the pigs to?" asked the rider.

"Out to pasture 'em a bit."

"What for?"

"To fatten 'em."

"Isn't that pretty slow work to fatten 'em on grass? Where I come from we pen them up and feed them on corn. It saves a lot of time."

"Yaas, I s'pose so," said Mr. Shaw. "But—what's time to a hawg?"

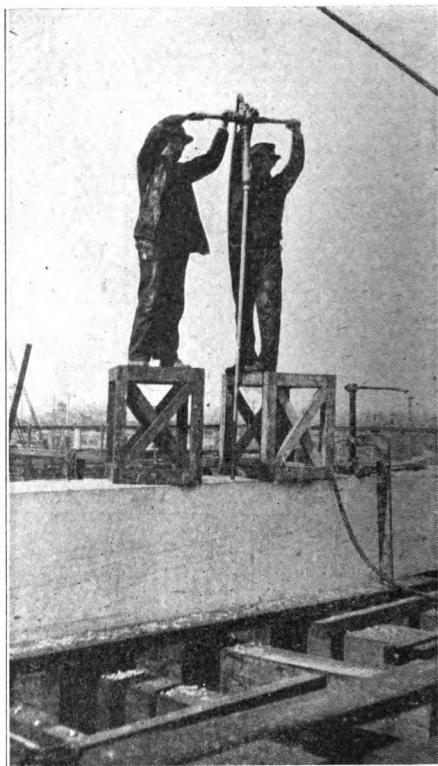


### Making Drift Pins With Boyer Riveting Hammers.

This photo shows how the No. 80 Boyer hammer is being used in making drift pins. In this manner a blacksmith and helper made 160 15/16 drift pins in eight hours at a cost of 2½ cents per pin. Where it is necessary to have a blacksmith on structural iron jobs to dress tools he has spare time to make drift pins, and this is one of the ways in which his spare time can be made to pay.

An old rivet set was made into a swedge to fit the air hammer and a common swedge block was used to fasten an arm to hold the air hammer plumb over bottom swedge as shown in photo.

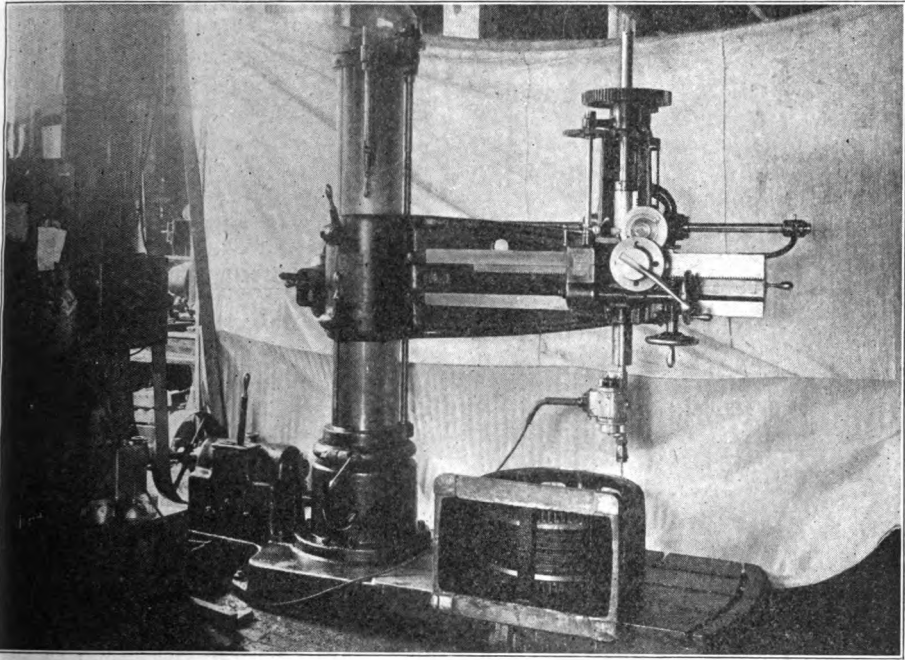
Mr. Geo. Burtscher of the Kelly-Atkinson Construction Co. is the originator of this stunt. He is shown at the left in the photo.



### Using Boyer Riveting Hammer for Driving Drift Bolts.

The photograph shows a No. 90 Boyer Hammer driving a 1½" diameter drift bolt 7' long, 1/16" drift and upon which the last two feet were driven at the rate of a foot in 85 seconds. The operators at the Southern Pacific Company's ship-yards were highly elated over the success they had with the No. 90 Hammers, much of which was due to the fact that the No. 90 Hammer when driving the drift bolt did not flatten or spread the head of the drift.

Three of the No. 90 Boyer Hammers, in conjunction with a great number of the Little Giant Wood Boring machines, were used in the construction of the Str. "CONTRA COSTA," the hull for which was recently launched at Oakland, Cal. The "CONTRA COSTA" is probably one of the largest car-carrying



ferry boats in the country and is of the following dimensions:

Over-all, 433' 4".

Length over transom, 420'.

Width, 116'.

Folded beam, 66' 6".

Depth, 19' 5".

In the hull alone there was used 2,700,000 feet of lumber.

These three No. 90 Boyer Hammers drove over 160,000 pounds of drift bolts, this amount not including the galvanized spikes used in the hull.

#### **Duntley Electric Drill Used on Radial Drill.**

The accompanying illustration shows a new application of the Duntley Electric Drill for drilling comparatively small holes on a large radial drill. A considerable amount of power is required to drive the modern radial drilling machines and when drilling small holes it is necessary to operate at the highest possible speed, with excessive wear and tear on a very expensive tool. It is frequently necessary to drill small

holes in large pieces of work which can only be gotten under the larger drilling machines. By equipping the Duntley Electric Drill with a Morse taper shank, which will fit into the socket on the spindle of the radial drill, it is not necessary to run the radial drilling machine itself, but simply operate the small motor in the Duntley drill, using the feed mechanism, of course, of the radial drill. In one of the large machine shops where this outfit is in use a very great saving in power is reported, and the users figure that a great saving in wear and tear on the drill itself is effected. The Duntley drill can be applied to the radial drill just as quickly and easily as an ordinary twist drill can be put into the socket.

#### **Another Excuse.**

A boy who had been absent from school for several days returned with his throat carefully bandaged, and presented this note to his teacher: "Please don't let my son learn any German today, his throat is so sore he can hardly speak English."

### A Full Day.

At a recent dinner given to the Giants and the White Sox after their world-circling tour, one of the speakers said that a friend of his named Cassidy went to mass and heard the priest preach on the "Judgment Day." After the services he waylaid the clergyman.

"Father," inquired Cassidy, "I want to ask you something. You say that when the trumpet blows on 'Judgment Day' everybody who ever lived in this world will come before the 'Judgment Seat' to be judged for their sins on earth?"

"I so stated."

"Will Adam and Eve be there?"

"Undoubtedly."

"And Cain and Abel?"

"To be sure."

"And Jack Johnson and Jim Jeffries?"

"I assume so."

"And Ban Johnson and Charley Murphy?"

"They will."

"And the A. O. H.'s and the A. P. A.'s?"

"I told you everybody would be there."

"One thing more: Will Hogan that sued me in the magistrate's court last week and me both be there?"

"I tell you, yes."

"Then there'll be dam' little judging done the first day!" said Cassidy.

### A Chest of Eggs.

"When I arose to speak," related a martyred statesman, "some one hurled a base, cowardly egg at me and it struck me in the chest."

"And what kind of an egg might that be?" asked a fresh young man.

"A base, cowardly egg," explained the statesman, "is one that hits you and then runs."

### Among Our Wives.

"Dear me, it's so hard to buy for a man."

"Yes. I hate to spend the money that way, too."

### His Seven Ages.

The seven ages of man have been well tabulated by somebody or other on an acquisitive basis. Thus:

First Age—Sees the earth.

Second Age—Wants it.

Third Age—Hustles to get it.

Fourth Age—Decides to be satisfied with only about half of it.

Fifth Age—Becomes still more moderate.

Sixth Age—Now content to possess a six-by-two strip of it.

Seventh Age—Gets the strip.—Louisville Courier-Journal.

### Resourcefulness.

"Waiter!" called a diner at a local club, "come here at once! Here's a hook-and-eye in this salad!"

"Yesser, yesser," said the waiter, grinning broadly. "Dat's a paht of de dressing, sah!"

### The Modern Maid.

Mistress: "Oh, Mary, didn't you know you always ought to bring me the letters on a salver?"

New Maid: "Yes'm, I knew all right; but I didn't know you did!"

### He Wasn't a Lump.

She weighed 224 if she weighed an ounce, and she did weigh an ounce.

The whole rink shook and rumbled as she struggled round in her efforts to master the whirling art.

Suddenly—a terrific thud—a groan—and there, piled up upon the boarding lay a heap of overbalanced femininity.

The woman opened her eyes.

"You will have to wait but a moment, madam," politely remarked the manager. "We have just sent for the crane. I trust you are not hurt?"

"N-n-no, I don't think so!" she gasped bravely back. "But, oh, there are some dreadful lumps in your floor!"

"Lumps be hanged, madam!" growled a half smothered voice from underneath. "I'm not a lump; I'm one of the attendants!"



A fatted calf maketh a full stocking.

Society weddings come under the head of fashionable ties.

Most of us can see a sorrow twice as far away as a blessing.

The man who lacks push is willing to take things as they come.

Some folks get what they want by pretending not to want it.

Dreaming sweet dreams comes as natural to a girl as a fly to a plate of butter.

Misfortune is no respecter of persons—and neither is fortune, for the matter of that.

It's all right to decorate an old house with paint, but a cynical old face—well, that's different.

With all the new-fangled what-nots and the patented time-savers, thinking still has to be done in the good old-fashioned way.

Enough bananas were imported into the United States last year to furnish peelings sufficient to give the people one hundred slides per capita.

A word to the boys: If you don't like the firm that is working for you, fire the boss and reorganize; otherwise, sit still in the boat.

Kind words and bald heads never dye.

Silence is the wisest argument of an ignorant man.

Many a harmless looking bottle contains a lot of fish stories.

Gold may be the key to society, but poverty is the strongest bar.

And one good action is worth more than a hundred good intentions.

After talking to some people we ponder deeply on the high price of ivory.

With one foot in the grave it doesn't take a man very long to get there with both feet.

One way not to be happy is to have more time and money than you know what to do with.

Love is considered the ruling passion, but occasionally the almighty dollar administers a terrific jolt.

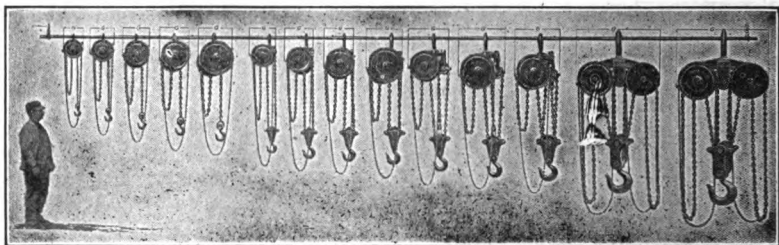
A man occasionally interferes with the affairs of a woman without getting the worst of it—in a novel.

Girls, if a young man doesn't know how to make love, it is neither arduous nor unpleasant to teach him.

A maid of 20 tries to act like a widow of 40, a widow of 40 tries to act like a maid of 20—and there you are.

**A GUARANTEE against DEFECTS for the Life of the Block goes with every**

# Reading Multiple Gear Chain Block



Self-Lubricating—works in any position—works in all kinds of weather.  
Try one 30 days—return at our expense if not satisfactory.

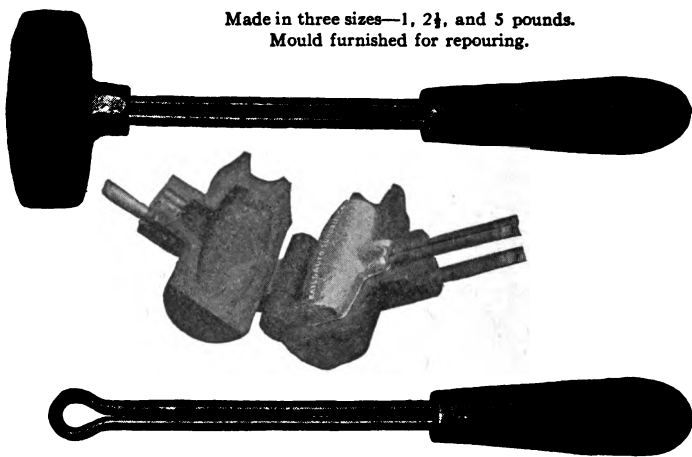
*Any Chicago Pneumatic Tool Salesman will take your order or we will send direct.*

## Reading Chain Block Company

Reading, Pa.

## If You Must Knock Use Soft Hammers

Made in three sizes—1, 2½, and 5 pounds.  
Mould furnished for repouring.



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**CHICAGO PNEUMATIC TOOL CO.**

**1014 Fisher Building,  
CHICAGO**

*Branches Everywhere*

**50 Church Street  
NEW YORK**

When writing to advertisers please mention Ideal Power.

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# IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances  
By THE IDEAL POWER PUBLISHING COMPANY  
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Vol. 11.

OCTOBER, 1914.

No. 3.

## The Unit System for Air Power Plants

This article is addressed to those contemplating the installation of large steam or electrically driven compressors and we respectfully request careful consideration of the same. The operating cost figures for the fuel oil driven compressors are real (not assumed) and are guaranteed by a company which for fifteen years has concentrated its exceptional facilities upon the production of air compressors.

We can furnish steam or power driven units of any required capacity, but as such machines are necessarily accompanied by more or less closely related prime movers the overall efficiency and hence the operating cost is variable between very wide limits, being dependent, of course, upon the distinctive conditions surrounding each installation.

Class N-SO "Chicago Pneumatic" compressors being self-contained readily lend themselves to the unit system for air power plants of large capacity and operate at heretofore unattainable economies independent of boilers, engines, shafts, belts, gears, dynamos or motors. The low cost of power production and the elimination of costly losses makes for cheap compressed air and consequently broadens the field of application of the same to a corresponding degree.

In the installation of new compressors, however, the consideration of first cost is too often regarded as of paramount importance with the ultimate result that the owner pays dearly for overlooking the saving resulting from the employment of more efficient and economical equipment.

Assume a concrete instance involving a plant having a capacity of 1,200 cubic feet of free air per minute.

Four 300-cubic foot compressors cost to operate as follows (fuel at 3c per gallon):

One day (9 hours).....	\$ 6.48
One year (300 days).....	1,944.00

One 1,200-cubic foot cross compound steam driven compressor costs approximately as follows (coal \$3 per ton):

One day (9 hours).....	\$ 11.34
One year (300 days).....	3,402.00

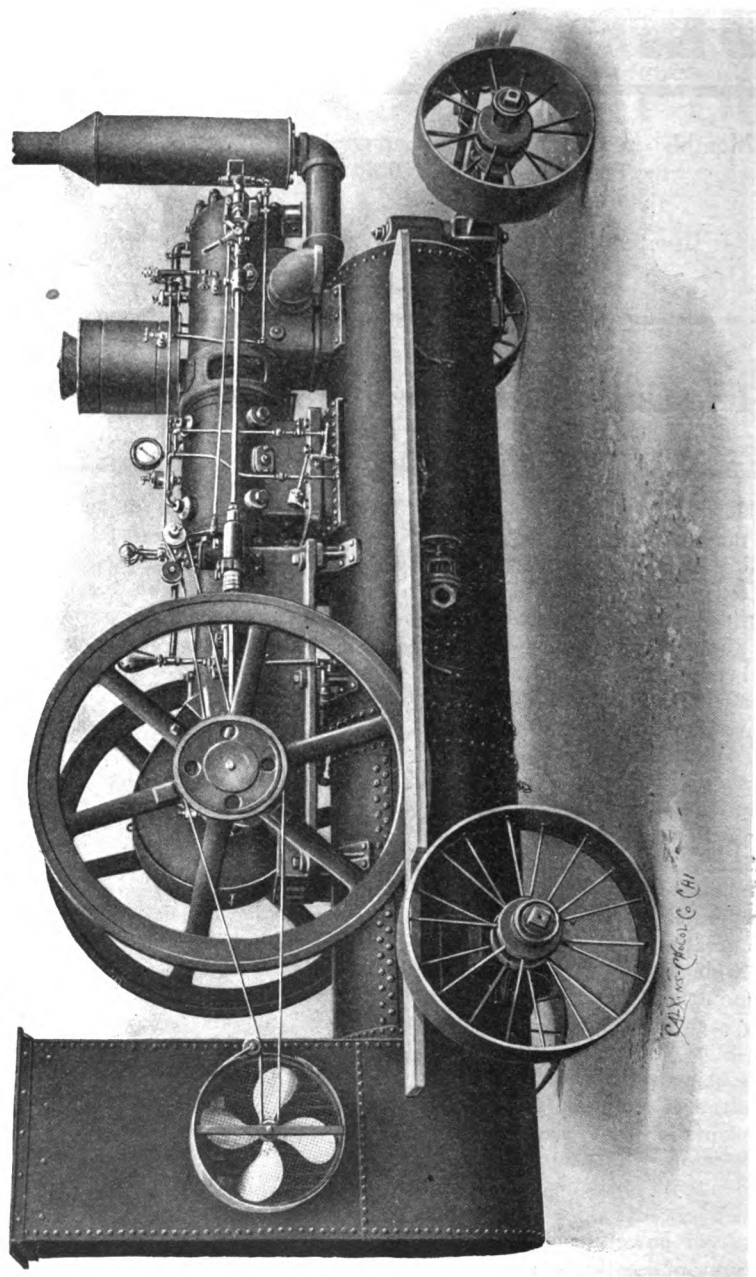
One 1,200-cubic foot electrically driven compressor costs approximately as follows (current 6c per K.W.):

One day (9 hours).....	\$ 9.18
One year (300 days).....	2,754.00

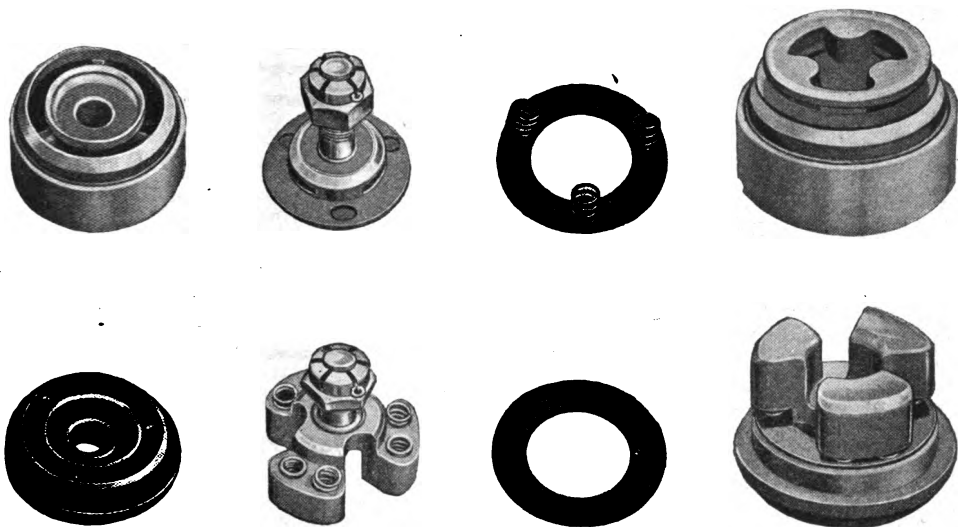
Saving in use of oil over steam per year, \$1,458.

Saving in use of oil over electricity per year, \$810.

This calculation shows the remarkable saving attending the use of oil driven



"Chicago Pneumatic" Class N-SO Fuel Oil Compressor—Truck Mounted.



"Simplate" Flat Disc Type of Inlet and Discharge Valves.

compressors. The flexibility of the battery of compressors to meet partial load conditions, the standardization of parts, and the freedom from entire shut downs due to breakages, are further conclusive arguments on behalf of the unit system.

The unit system is particularly desirable for large plants in inaccessible localities, the relatively small parts of each unit permitting of ready transportation to points which bar heavy machinery. Also the salvage value of a unit system plant is much greater than that of the plant containing a single large machine. Contractors and others having work of a temporary nature will at once understand and appreciate this feature.

Brief mention only has been made of the merits of the unit system, but the services of the Chicago Pneumatic engineering department are at the command of those interested and is at all times ready to extend the co-operation so essential to mutually satisfactory results.

Given your air capacity requirements, your cost of coal or electrical current and they will gladly submit comparative operating costs that cannot fail to prove interesting.

Address the company at either 1014 Fisher Bldg., Chicago, or 50 Church street, New York.

### How Simplate Valves Meet High Speed Requirements.

When the increased demands of manufacture, particularly in the line of machine tools, reached that acute stage where machinery was producing all it possibly could—when it became physically impossible to do one bit more and stand up under it—high speed steel came to the rescue and set a new mark for outputs and established new standards of longevity for drills, reamers and kindred tools.

The tendency to increase the speed and capacity of air compressors is in line with the general trend toward higher speeds in all forms of power machinery, due to better understanding of lubrication and the change from open to enclosed type of construction.

Although much attention had been given to the development of a valve that would meet the higher speed demands of present day practice, no satisfactory solution was arrived at until the Simplate Disc Valve was perfected, and there is many a good air compressor on the market today with its desperate effort to keep up with the times nullified by the attempts to employ valves of the "old school," admirably adapted though

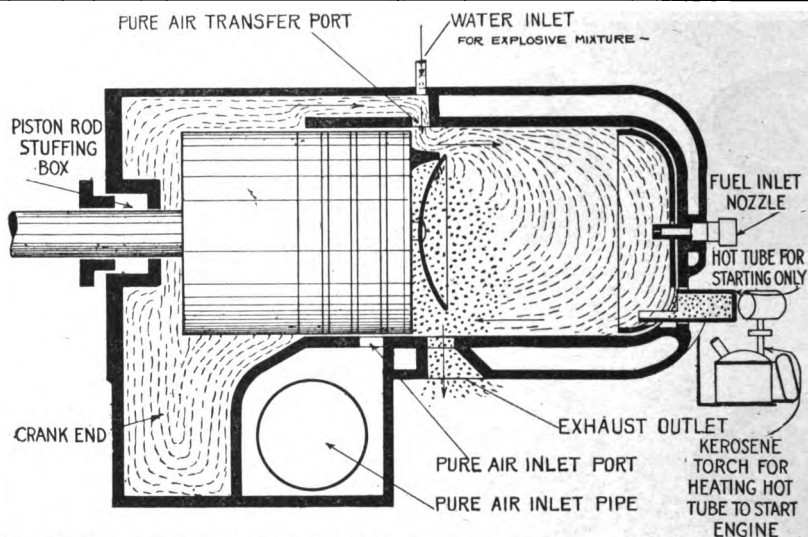


FIG. A. POSITION OF PISTON AT TIME OF SCAVENGING AND EXHAUST. The compressed air from the crank end of the cylinder is shown rushing through the pure air transfer port into the combustion chamber sweeping out the burned gases through the exhaust outlet. Pure air inlet port is closed by the piston.

Note.—Dashes represent pure air; dots represent burned gases.

they be to the speed requirements of by-gone days.

Compressor valves today must stand up under an increased strain proportionate to the increase in the number of fly wheel revolutions per minute. Being designed for high speeds, Simplate Valves are naturally very light but specially selected materials and small lift combine to render them practically indestructible. The requirement, therefore, of durability has been satisfactorily met.

Greater simplicity must characterize the compressor valve of today, for high speed makes short work of complicated construction, and no attempt to meet new conditions by adopting more elaborate mechanism would ever be countenanced by the rational mechanical mind. The Simplate valve—a coined word, by the way, made up of “simple” and “plate”—is without doubt the simplest possible form of valve construction, consistent with large openings for the rapid passage of air. Consisting of a flat ring or disc, the Simplate valve meets the requirements of simplicity to the queen’s taste.

Compressor valves of today must simplify the problem of lubrication. If the advantage we have already attributed to the Simplate construction could only

be obtained at the expense of greater vigilance and more liberal use of lubricating oil, the increased cost of attendance would be an appreciable offset. But as the Simplate valve requires NO lubrication, what more need be said on the subject?

The modern tendency toward refinement in the construction of machinery is closely allied with our efforts to promote human efficiency, and we all know that noise, persistent, nerve racking noise, is one of the abominations of a workman’s life. Here again the Simplate valve is a great stride in the right direction and meets present day requirements by being practically noiseless in operation.

Last, but not least, Simplate valves meet the present day ideals of efficiency. They are set radially in the cylinder, are arranged to give a minimum clearance and afford a higher volumetric efficiency than is usually obtainable. No cages are employed and the openings for air are consequently very large and direct.

Simplat valves are now regularly furnished with all Type N “Chicago Pneumatic” Compressors.

The Chicago Pneumatic Tool Co. guarantees them against defects or breakage for a period of three years.

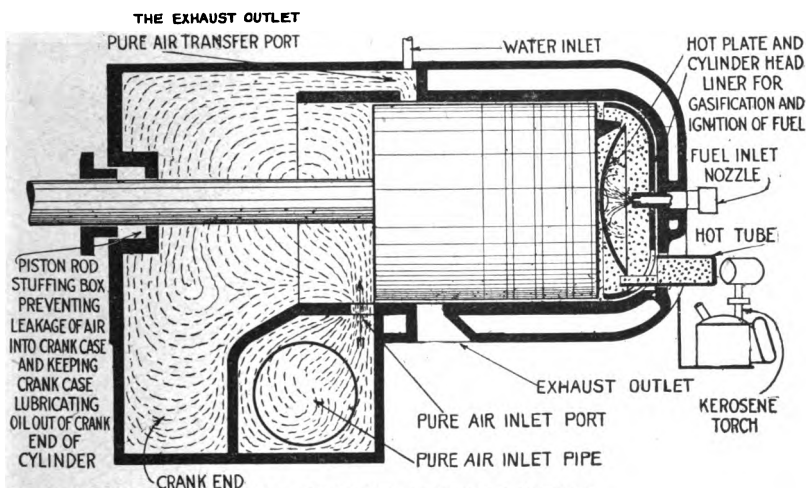


FIG. B. POSITION OF PISTON AT TIME OF COMBUSTION.

Showing the fuel entering the combustion chamber and pure air entering crank end of cylinder through pure air inlet port. The exhaust outlet and pure air transfer port are closed by the piston.

Note.—Dashes represent pure air; dots represent burned gases.

#### How the Air and the Burned Gases Are Controlled in the Power Cylinder of the Giant Oil Engine.

The drawings reproduced above and at the head of the page adjoining show the process of bringing the pure air into the combustion chamber and the method of disposing of the gases after they are burned.

The piston in compressing air in the combustion space uncovers the intake port (Fig. A) leading to the charging chamber, which allows air at atmospheric pressure to fill this chamber until the piston begins to return on its power stroke, when the air in the charging chamber is slightly compressed.

As the piston approaches the completion of its power stroke, the exhaust port (Fig. B) is uncovered, letting burned gases escape to the atmosphere.

Very shortly after, in the continuation of the power stroke, the transfer port is uncovered, which allows air from the charging chamber to rush into the combustion space. This air, while serving primarily to make the combustible mixture, also assists in scavenging the cylinder of the burned gases, for on entering the cylinder it strikes a deflector on the face of the piston, which aids it to perform this function.

#### The "Chicago Sinker."

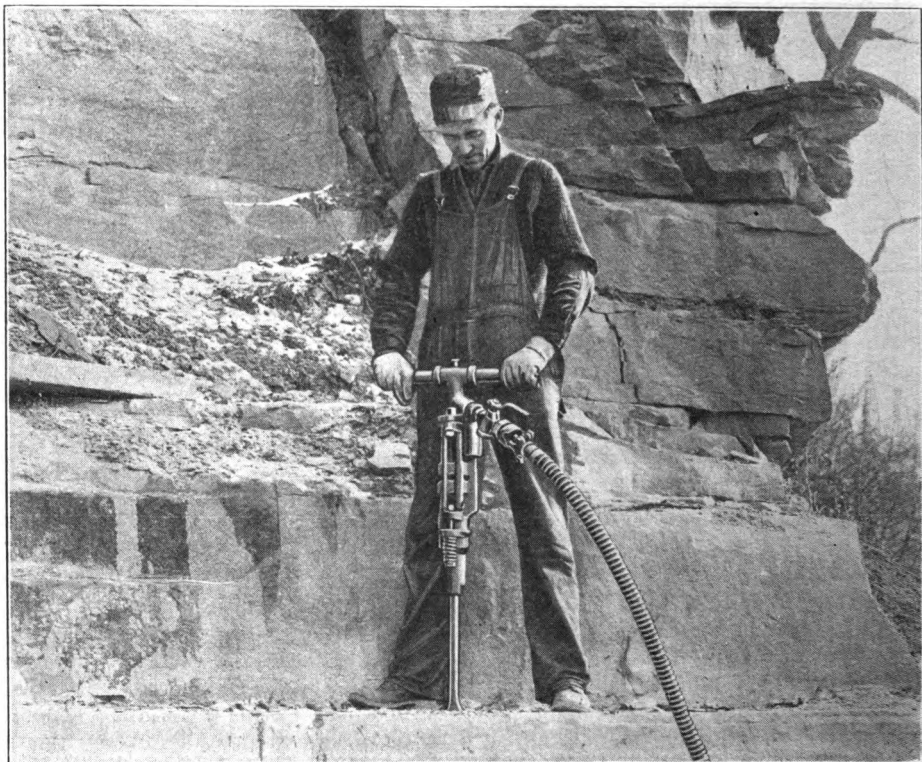
For drilling deep holes of large diameter in fast time there is nothing to equal the "Chicago Sinker." The speed with which it drills in all kinds of rock is astounding. It takes hardly no time at all to finish a hole. And it does it all so easily.

The "Chicago Sinker" is at its best drilling holes from six to ten feet deep. It is nothing to have it drill a two-inch diameter hole in hard granite at the rate of five or six inches per minute.

The "Chicago Sinker" uses hollow steel. And this steel is without a shoulder or collar, which explains why it is cheaper and lasts many times longer. And it explains, too, why the steel does not snap off in the shank as others using a collar do.

The "Chicago Sinker" rotates very easily because there is no severe shock or jar on the operator. This allows the man to keep the machine to its work. Not only that, but also to give without any exertion at all the third of a turn to the machine that keeps the hole round.

The holes drilled by the "Chicago Sinker" are cleaned of the rock cuttings by a jet of air passing through the hollow steels used with it. The hole is therefore always clean at the bottom and this



Chicago Sinker at Work.

helps the drilling speed enormously.

The "Chicago Sinker" can be equipped with a shackle for gripping the steel and drawing it out of the hole. It will hold the collarless steel with a bulldog grip when the machine operating at full speed is raised a trifle to blow out the hole and yet will release the steel instantly when it is to be replaced with the next longer one.

The "Chicago Sinker" maintains its high drilling efficiency right along. That is where it differs from others. It not only starts doing 20 per cent to 25 per cent better than the next best, but it keeps on at the same high drilling rate. Others meanwhile always fall off. There's a very good reason for this, of course.

The fast drilling of the "Chicago Sinker" is largely due to the valve—a hollow steel ball. Its light weight of only an ounce, and its short travel of less than an eighth of an inch insure a very rapid

valve movement. And this in turn means a very rapid striking piston. That is why the "Chicago Sinker" is such a fast drill—er and so reliable a machine.

The action of the hollow steel ball valve of the "Chicago Sinker" is positive—and it is so well timed that it may be called perfect. This—its extremely light weight of one ounce—its slight movement of less than an eighth of an inch—the quick, sharp and unrestricted exhaust—these account for the high drilling efficiency of the "Chicago Sinker."

Even dirt in the air cannot stop or slow down the "Chicago Sinker." This is true because there is no place for dirt to lodge. You see, both the ball valve and the seats are air washed some 1,500 times a minute. And once in the cylinder the dirt is almost immediately swept out again into the atmosphere through the large and unrestricted exhaust ports. There is neither time nor a place for dirt

to lodge. So there is nothing to interfere with the high drilling speed of the "Chicago Sinker."

The hollow steel ball valve of the "Chicago Sinker" is a loose fit in the valve cage and absolutely nothing can cause it to stick or flutter. Its action is quick and positive—its light weight and small movement makes this quick and positive action possible. And that is why the piston in turn strikes so hard a blow and so many blows a minute.

Because the hollow steel ball valve cannot stick or flutter—because dirt cannot stop or slow it down—because it is so quick and positive in its action—because it is wear resisting and indestructible—these are a few of the many reasons which account for the high drilling speed of the "Chicago Sinker." They also account for there being no air waste.

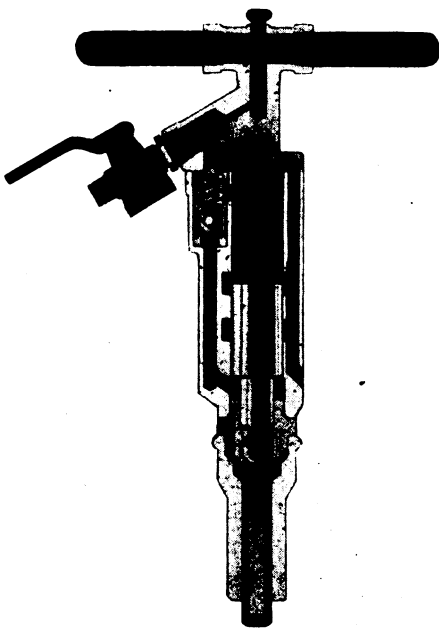
Almost all drills are more or less subject to freezing troubles. This is due to moisture in the air and the tortuous and narrow passages the exhaust must travel through. But the "Chicago Sinker" is not built that way. The passages are both short and large, and the exhaust is correspondingly sharp and quick.

The hollow steel ball valve of the "Chicago Sinker" is guaranteed against wear or breakage for a whole year. No other valve carries with it such a guarantee. Naturally not, because no other valve is so wear-resisting and indestructible. This guarantee means a great big saving to the user. Not only in maintenance cost, but also in time and drilling cost.

No matter how high or how low the air pressure, the "Chicago Sinker" always operates right. And it will always drill proportionately faster than others, regardless of pressure. It does this because the valve action is right—in fact, because the whole machine is right.

The hammer of the "Chicago Sinker" is a four-pound piece of hardened steel and it strikes 1,500 blows a minute. No wonder it does such good execution in the rock. So good, in fact, that there isn't another machine like it for drilling speed.

Its comparatively light weight of 43



Sectional View of Chicago Sinker, Showing Simple Mechanism.

pounds helps materially to make the "Chicago Sinker" the fast machine it has proved itself to be. It makes it easy for the man to handle and move about with. Also it is a well-balanced machine.

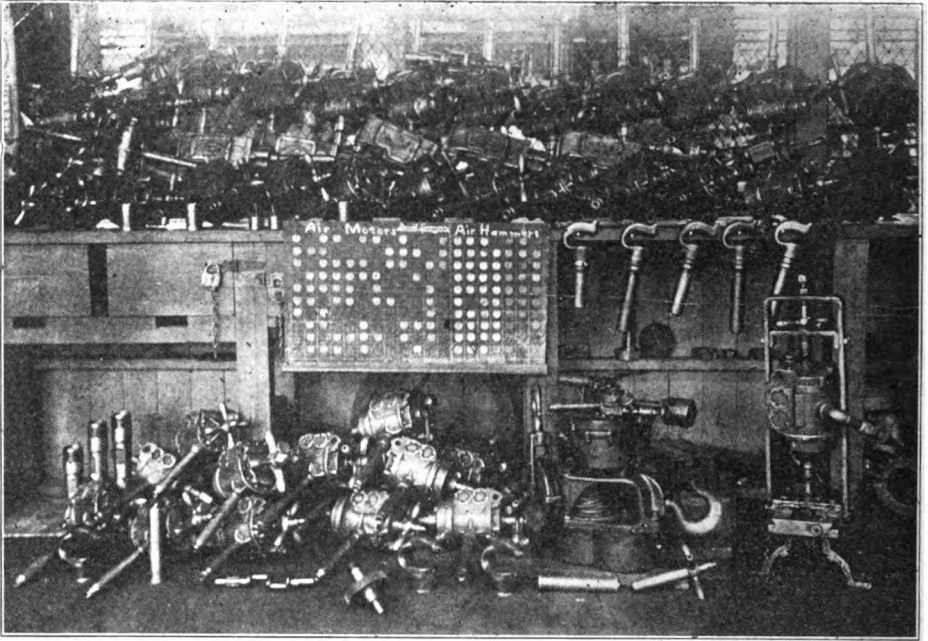
It is extremely easy to rotate the drill steel of the "Chicago Sinker." It is easy because the machine is neither too heavy nor too light. It is balanced just right. And this, of course, helps to account for the high drilling speed obtained.

The automatic lubrication of the "Chicago Sinker" is simple and yet most effective. It keeps the machine well oiled, but is not wasteful. And it does it without the use of any springs or check valves. Furthermore, it only feeds oil while the Sinker is in operation—and it does it automatically.

The exhaust of the "Chicago Sinker" is located so that it does not strike the operator while rotating the machine.

The design of the "Chicago Sinker" is just right and is the result of a great many years' practical experience in all parts of the world. The guaranteed hollow steel ball valve—the easy rotation—





Scene in Tool Room of Large Western Railroad, where Boyer Hammers, Little Giant Drills and Other "Chicago Pneumatic" Products Reign Supreme.

the novel method of lubrication—the spring retained front head—are only a few of the special features that account for its being such a rapid driller.

By unscrewing the nuts on four heavy bolts every part of the "Chicago Sinker" is made accessible. And these nuts are themselves easy to get at. This is why the entire machine can be taken apart or put together in a few minutes. The construction is so extremely simple.

Because of the high speed the "Chicago Sinker" works at, and the hard blow it strikes, only the very best material can be used in its construction. It also has to be properly oil treated and hardened. And this in turn calls for workmanship of the highest class. The material, its treatment and the workmanship being of the best, it is not surprising that the maintenance costs of the "Chicago Sinker" are low.

Manufactured in large quantities, the parts that go to make up a "Chicago Sinker" must necessarily be machined most accurately—so accurate that they

will pass the standard plug and ring gauge inspection test. Because this inspection is rigid and severe, an imperfect piece cannot possibly escape rejection. This inspection applies to the material and treatment of each piece as well as to the workmanship on it.

Because designed right and because so well made, the "Chicago Sinker" is cheap to operate and maintain. The improved ball valve motion insures a low air consumption and the high-grade materials used as well as the great care taken in their manufacture accounts for the small "up-keep" costs under the severest hard rock conditions.

Weight for weight and dimension for dimension there isn't another machine that for all around conditions and over long periods can possibly compare with the efficiency of the "Chicago Sinker." That is why it is guaranteed to cost less to operate and maintain. That is why it is guaranteed to drill faster.

Bulletin 153, giving further details, will be supplied on request.

## MOTTO OF THE BOILER MAKERS: HAMMER!

Just because there was a world's war going on, the papers gave but scant attention to the twenty-sixth annual convention of the American Boiler Manufacturers' Convention at the Waldorf-Astoria the first week of September, says Roy L. McCardell in the *New York World*.

Yet boilermakers from all over the United States were at this convention, and at least a hundred lady boilermakers held social session in the Myrtle Room, while their husbands listened to the "Report of the Committee on Uniform Specifications," although, frankly, the boilermakers wore badges but no uniforms, hence I cannot see why they were interested in the specifications regarding uniforms.

Most of the delegates and their wives stopped at the Waldorf-Astoria during convention week, the management of which thoughtfully provided them with a homelike atmosphere by placing them on the Thirty-third street side, where a skyscraper is in course of erection and on which the riveter's rat-tat-rat-tat-tats provided a soothing lullaby.

A banquet on Thursday night and a trip to Coney Island Friday were among the diversions.

At the banquet and upon the excursion the more jovial element of the visiting boilermakers threw dull care to the winds and told the following "Best Stories of the Boilermaking Industry":

A boiler manufacturer of Easton, Pa., who had married a woman with a shrewish tongue, was approached by a stranger one day who offered to sell him a sound absorber, which, as the peddler stated, would spare the manufacturer from the din and noise when he went through his plant.

"Can it be worn without being conspicuous?" asked the boiler man.

"Sure!" said the peddler.

"Give me a pair to wear at home," said the manufacturer.

"You won't believe this," said Mr. W. H. Broderick, who is a big manufacturer

of Muncie, Ind., "but it was a gang of boilermakers in Jersey City who had the first flight in a heavier-than-air machine.

"They were working in a big boiler in the yard of the plant, and after tackling their dinner pails at noontime took a nap in the boiler in the heat of the day in the half hour coming to them till the whistle blew.

"While they were snoozing a cloud of Jersey mosquitoes attacked the boiler and bored through it from the top to get at the sleeping workmen. The men were awakened by the steel borings falling in their faces, and seizing their hammers, they clinched the skeeters' bills on the inside of the boiler top, and the mosquitoes, enraged with the pain, flew off with the men, boiler and all, over the Hackensack meadows and kept them up in the air till they, the mosquitoes, were exhausted—which was in about six or seven hours."

"Did you say we wouldn't believe it?" asked W. H. S. Bateman of the Champion Rivet Company. "Well, we do believe you, we don't."

"A tramp came running into the superintendent's office at a Pittsburgh plant," said Secretary Slocum, "his eye had a terrible bump upon it and he was loud in his demands for cash compensation for the injury. When asked as to how it was caused he explained that he was drifting through the yards intending to ask for work, when seeing riveters at work on a big marine boiler shell and hearing workmen stirring inside, he placed his eye to a rivet hole only to feel an awful blow from the hammer of the man inside.

"'It was your own fault,' said the boss. 'It was not up to you to look into the matter.'

"'Maybe you're right,' replied the tramp, 'but the next time one of these orator guys tells me to rivet my gaze on anything I'll throw a brick at him. Once is enough for me!'"

After the noise and excitement of New York the boilermakers all said they were glad to go back to the quiet life at the shops again.



Showing the Little Giant Model "H" just before its departure on 3,000 mile reliability run, in charge of George R. Giroux of the Automobile Department. Edward Carlson is at the wheel. These two gentlemen with a load of stone weighing one ton, constitute the load of the Little Giant.

### The Little Giant Reliability Run.

On August 1st a model "H" Little Giant Truck left Chicago on an endurance run of approximately 3,000 miles, its course being shown by the adjoining map. Although the original itinerary contemplated reaching New York August 18th, the roads around Pittsburgh were found impassable during the severe storms of the second week in August, and owing also to demonstrations given by the way, it did not reach New York until the 25th.

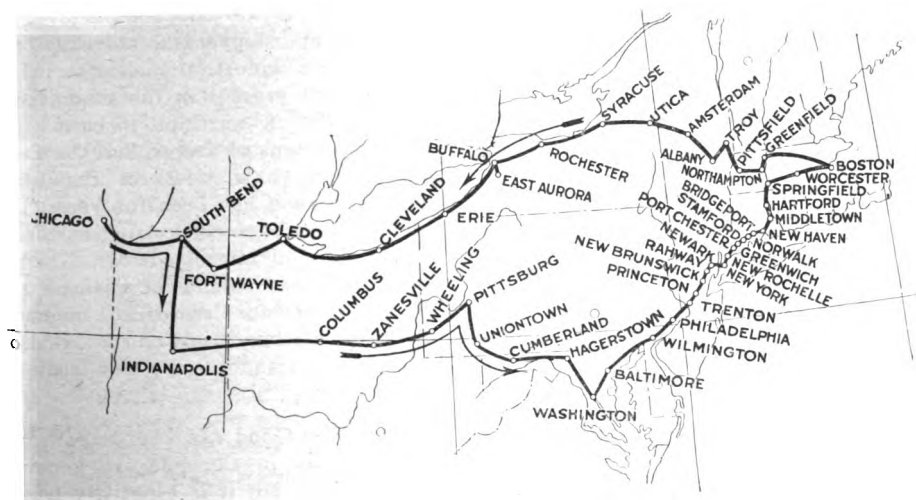
The truck averaged 100 miles a day in round numbers since the time of leaving, the highest mileage of any one day being 163. No traveling was done on Sundays and days were lost in Pittsburgh on account of the rain. Several hours were lost near Brownsville, Pa., where a detour was necessary because of a new bridge being put in on the main road.

On this detour a very severe grade was encountered which showed 38 per cent on the gradometer and which the natives declare is too much for seven out of ten of the vehicles which essay it.

Another detour was necessary near St. Clairsville, O., on account of the main pike being repaired. After exploring strange roads until 3:20 a. m. a two-sided shed was discovered into which the truck was run, the men sleeping on the hard stones under a leaky roof during a severe storm until 7:30 a. m., when the trip was resumed toward Pittsburgh. A distance of 163 miles had been covered by the truck before refuge was taken.

The itinerary follows:

Date.	Time	Incident.
Aug. 1	10:10 a. m.	Left Chicago.
Aug. 2	6:50 p. m.	Ar. South Bend.
Aug. 3	7:50 a. m.	Left South Bend.
Aug. 3	8:12 p. m.	Ar. Indianapolis.



Showing Route of Little Giant on Reliability Run.

Aug. 4	9:25 a. m. Left Indianapolis.	Sept. 11	10:24 a. m. Left Pittsfield.
Aug. 4	7:28 p. m. Ar. Springfield, O.	Sept. 11	6:27 p. m. Ar. Albany, N. Y.
Aug. 5	9:55 a. m. Left Springfield.	Sept. 12	9:22 a. m. Left Albany.
Aug. 5	11:03 p. m. Ar. Columbus.	Sept. 12	5:53 p. m. Ar. Utica.
Aug. 6	8:30 a. m. Left Columbus.	Sept. 14	10:21 a. m. Left Utica.
Aug. 7	3:20 a. m. Arrived at Barn.	Sept. 14	2:18 p. m. Ar. Syracuse.
Aug. 7	7:30 a. m. Left Barn.	Sept. 15	10:06 a. m. Left Syracuse.
Aug. 7	9:20 p. m. Ar. Pittsburgh.	Sept. 15	5:12 p. m. Ar. Rochester.
Aug. 12	1:00 p. m. Left Pittsburgh.	Sept. 16	10:34 a. m. Left Rochester.
Aug. 13	12:23 a. m. Ar. Uniontown.	Sept. 16	5:04 p. m. Ar. Buffalo.
Aug. 13	11:07 p. m. Left Uniontown.	Sept. 21	9:47 a. m. Left Buffalo.
Aug. 13	11:15 p. m. Ar. Cumberland.	Sept. 21	6:45 p. m. Ar. Erie.
Aug. 14	11:00 a. m. Left Cumberland.	Sept. 22	10:53 a. m. Left Erie.
Aug. 14	6:45 p. m. Ar. Hancock, Md.	Sept. 22	6:02 p. m. Ar. Cleveland.
Aug. 15	7:45 a. m. Left Hancock.		
Aug. 15	5:50 p. m. Ar. Washington.		
Aug. 19	8:43 a. m. Left Washington.		
Aug. 19	12:06 noon. Ar. Baltimore, Md.		
Aug. 20	9:52 a. m. Left Baltimore.		
Aug. 20	6:12 p. m. Ar. Oxford, Pa.		
Aug. 21	9:37 a. m. Left Oxford.		
Aug. 21	5:37 p. m. Ar. Philadelphia.		
Aug. 25	8:35 a. m. Left Philadelphia.		
Aug. 25	6:35 p. m. Ar. New York.		
Aug. 31	9:40 a. m. Left New York.		
Sept. 1	9:40 p. m. Ar. Hartford.		
Sept. 2	12:59 p. m. Left Hartford.		
Sept. 3	10:05 a. m. Ar. Boston.		
Sept. 9	8:51 a. m. Left Boston.		
Sept. 9	6:45 p. m. Ar. Greenfield.		
Sept. 10	10:04 a. m. Left Greenfield.		
Sept. 10	6:28 p. m. Ar. Pittsfield.		

A complete detailed record is being kept of the gasoline, oil and water consumed, as well as any incidental expense, so that an absolute cost per ton mile can be arrived at.

Up to latest report, which we are able to publish in this number, the following is the record:

Total quantity of gasoline consumed—215¼ gals.

Gargoyle Mobiloil "A"—47¼ qts.

Total cost of gasoline to date—\$24.75.

Total cost of Gargoyle Mobiloil "A"—\$3.89.

Total mileage—2,203.5.

Total water evaporated—20 gals., 3 qts., 1 pt.

# IDEAL POWER

PUBLISHED MONTHLY  
In the Interest of Compressed Air  
and Electrical Appliances

BY THE

**IDEAL POWER PUBLISHING CO.**  
**1014 Fisher Building**  
**CHICAGO, U. S. A.**

C. I. HENRIKSON Editor

Vol. 11. OCTOBER, 1914. No. 3.

## TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 50 cents per year

## ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our  
subscription list.

### President Duntley on the European Situation.

Mr. W. O. Duntley, President of the Chicago Pneumatic Tool Company, has recently returned from Europe where he spent two months in England and on the Continent in the interests of the foreign business of the company. He arrived in England just a few days prior to the outbreak of hostilities between Austria and Servia, followed later by the break between Germany and the Allies, and he witnessed a great deal of the excitement during the early stages of the war and the preparations that were made for it.

He reports that while business was very much demoralized in the first few days of the war, the requirements of the Navy and the War offices grew so brisk and heavy that as far as the products of the Tool Company were concerned, business has resumed its normal condition. Fortunately all of the foreign offices of the company were well stocked with goods when the war broke out, which has enabled them to take care of the sudden and increased demands. The shipments to the English company are greater now than ever before and the demand for pneumatic tools and practically all of the labor saving devices made by the company are greater now and will continue to increase in practically all of the countries now involved in the struggle. Compressed air and electrical labor-saving

machinery is of first importance in government shipyards, railroads and other large industrial concerns which are busy at present in the manufacture and repair of warships, firearms and other munitions of war so that the European business is now on the whole greater than it has been for years.

The unprecedented destruction that is now going on impressed Mr. Duntley with the great volume of business that is in store for American manufacturers of machine tools and all kinds of machinery as soon as the war is over.

### How to Get Good Air Tool Repair Men.

Good men in any line are generally hard to find, but it is especially true of air tool repair men. In the interests of those who are looking for services of this character, as well as of those looking for employment, we have established an employment department in the hope that we can bring the employer and employee together. Every shop where pneumatic tools are used extensively should have an experienced air tool man. If you need one let us know.

### These Men Want Jobs.

First class machinist, age 35, steady and sober, especially good on air tools. Can set valves and could take charge of all machinery. Address Ad-1, care Ideal Power.

Pneumatic Tool repair man with sixteen years' experience wants steady job where good work will be appreciated. Address Ad-2, care Ideal Power.

Air Tool man with railroad experience desires to make a change. Could take entire charge of pneumatic tool department. Address Ad-3, care Ideal Power.

### Liberal Reward.

A liberal reward will be paid for the apprehension of the evil spirit which gum-shoed its way into the editorial sanctum while our last number was in preparation, and with malice aforethought shuffled the names of the contractors appearing on pages 48 and 49. As a consequence we desire to apologize

for the inaccuracy, although any one of the contractors named could feel justly proud regardless of the structure with which his name were linked.

The new addition to the Tuller Hotel and the Kresge Building were erroneously reported as the work of the Geo. A. Fuller Co., instead of Jas. L. Stuart. The Statler Hotel, reported as the work of Jas. L. Stuart, should be credited to Geo. A. Fuller Company.

The work of the evil spirit did not stop with this, and it deserves another rap on the knuckles for giving the address of Miró y Nunez as Havana instead of San Juan, Porto Rico. Our agents, Sanchez Morales, at San Juan, drew our attention to this mistake which we hasten to rectify.

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#### Statement in Regard to Electric Drill Test

A certain manufacturer of electric drills has been publishing, for a number of years and is still publishing, a report of a test made at the New York Navy Yards on Jan. 6th and 7th, 1908. The circulars purporting to give the data of this test mention no dates whatever and the public is apt to be led to infer that they represent a recent test. Practically all of the electric drill manufacturers in the United States were entered in this test. The pending order for 70 electric drills was divided into five classes so that it could be separated if the drills of any one manufacturer showed up better in any particular class. As a result of the test, the entire order for 70 drills was placed for Duntley Electric Drills.

All of these drills with one exception, viz., those of the manufacturer who is circulating the information regarding the test above referred to, were wound for 110 volts. The manufacturer in question submitted tools wound for 220 volts, consequently the ampere readings of the latter tools should have been one-half that of the 110 volt tools for the same power input. The Chicago Pneumatic Tool Company has a very elaborate and correct report on the power required and work done in these tests, and this is obtainable by those in-

terested, if they will apply to the Chicago Pneumatic Tool Company, Electrical Department.

Great strides have been made in the manufacture of electric drills and the Duntley Electric Drills as manufactured today are far superior to what they were in 1908, so that we feel confident that they would win out much more easily in their present advanced state of development.

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#### Boiler Makers' Directory.

A complete directory of the Boiler, Tank and Stack manufacturers of the United States and Canada may be obtained by addressing Ideal Power and accompanying the request with \$3.00. The list is up to date and is authorized by the American Boiler Manufacturers' Association of the United States and Canada.

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#### State Fire Marshal Indorses the Ruby Building.

Judge John J. Johnson, agent for Ruby building at Brownsville, Ky., submits the following letter as evidence that Ruby construction means fireproof construction. As the letter comes from the State Fire Marshal it surely comes from one qualified to express himself on the subject.

"In answer to your letter, I will say that I have made a thorough examination of The Ruby All Steel, Portable, Fireproof Buildings, and I shall take pleasure in recommending same to anyone.

"For a small, or medium sized building, such as a garage, warehouse, storage house, etc., they are all you claim for them and cannot be excelled for any purpose, for which the present STATE LAW requires a fireproof building.

"Hoping that I may have the pleasure of seeing you, and going more thoroughly into your lines of business, I beg to remain,

"Yours truly,  
"C. C. BOSWORTH,  
"State Fire Marshal."

# AGENTS WANTED

to represent us in exclusive territory  
for the sale of

## RUBY PORTABLE STEEL BUILDINGS

Fireproof and easily erected.

The field for these buildings is partially indicated  
by the following uses to which they may be applied:

- |                          |                       |
|--------------------------|-----------------------|
| Garages.                 | Detention houses for  |
| Voting booths.           | contagious diseases.  |
| Hand-car houses.         | Outdoor sleeping      |
| Tool houses.             | houses.               |
| Bunk houses for con-     | Hunting lodges.       |
| struction gangs.         | Trap gun club houses. |
| Houses for watchmen at   | Fishing shacks.       |
| crossings.               | Summer cottages.      |
| Boat houses.             | Temporary offices.    |
| Passenger waiting-rooms. | Blacksmith shops.     |
| Shelter houses.          | Warehouses.           |
| Corn cribs.              | Dairies.              |
| Implement sheds.         | Ice cream stands.     |
| Pump houses.             | Fruit stands.         |
| Storage buildings.       | Lunch counters.       |
| Motorcycle houses        |                       |

Booths for moving picture machines.

Wonderful opportunity for live wires with or with-  
out capital, in large and small cities.

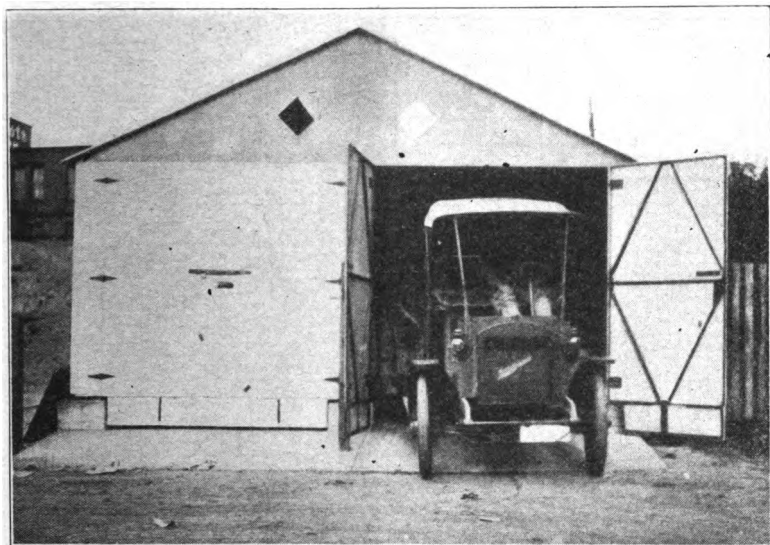
Write for information, terms, etc.  
Card enclosed for your convenience.

## CHICAGO PNEUMATIC TOOL CO.

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50 Church Street, New York

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A Ruby Garage, used by Mr. J. A. Sullivan, Northampton, Mass., for his Little Giant Truck.

### Some Details Regarding Ruby Buildings

Ruby Steel Portable Fire Proof Buildings are built in three standard heights of wall, eight, nine and ten feet. and in the following widths:

- 7 ft. 4 in.
- 9 ft. 8 in.
- 12 ft.
- 14 ft. 4 in.
- 16 ft. 8 in.
- 19 ft.
- 21 ft. 4 in.
- 23 ft. 8 in.
- 26 ft.

As they are sectional they may be furnished in any length in multiples of 28 inches.

If interested fill out the enclosed card and get a quotation on the size or sizes you have in mind. The price will include windows, doors and ventilators and the instructions that come with the building will enable you to erect it quickly, and without any difficulty.

Traveler—I have time for a drink?

Conductor—Yes, sir.

Traveler—Can you give me a guarantee that the train won't start?

Conductor—Yes. I'll take one with you!

### Spot Welding, and What it Means to Ruby Buildings.

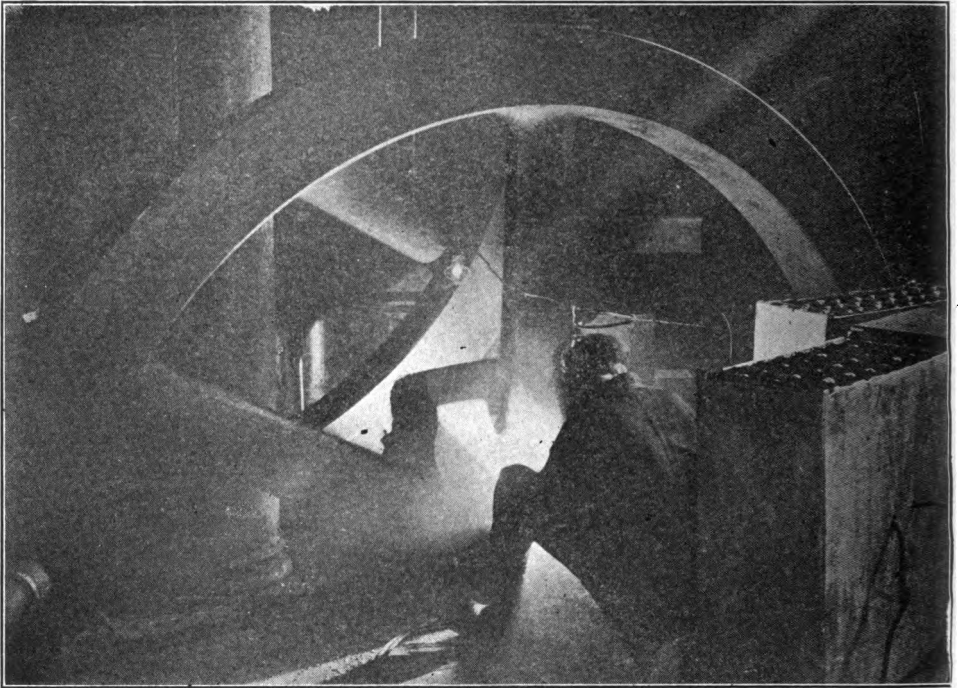
In the olden days when two pieces of metal were to be attached, the common method was to bore a hole through both, insert a bolt or rivet, and bind them together. Experience taught that this method was unsatisfactory, the expansion and contraction of metal naturally gave vent to some play.

This would gradually chafe the metal against the bolt or rivet. In time the weaker would give—water or moisture would settle on the edges—corrosion would set in. The consequences—something would be eaten away, the joint would become flabby, weakened and finally loosened.

In welding the pieces, they are placed between two electric contacts. The current melts the metal, which runs together, making a solid joint. No bolts, no rivets, no screws, nothing to rot, break, corrode or give way. Ruby all-steel sectional and portable buildings are the only ones on the market that are made in this manner.

But many a man is unable to hold an opportunity after grasping it.





Welding the broken hub of 13-ton fly wheel.

### **Pneumatic Chipping Hammers Make Electric Welding a Success.**

The electric welding of cast iron has opened up a very large field of application for the size 1X chipping hammers made by the Chicago Pneumatic Tool Company, because in all this work a great deal of chipping must be done and the success of the work depends largely upon the preparation of the job before welding.

In the welding of cast iron probably no one has had such great success as The Electric Welding Company, which makes a specialty of this kind of work. A notable example of this work and one in which 1X chipping hammers were used is shown in the above illustration. In this particular instance a 100-ton ice machine of the Sulzberger & Sons plant was broken entirely across the bed-plate through all four bearings and the fly-wheel, which weighs thirteen tons, was cracked entirely through the hub.

All these cracks were chipped wide

open clear to the bottom and filled with cast iron by The Electric Welding Company's process. Inasmuch as the breaking was caused by structural weakness, it was necessary to make this repair to produce a stronger base than the original construction.

The results show that the job was a success in this direction as the machine has been in operation and is now in perfect condition.

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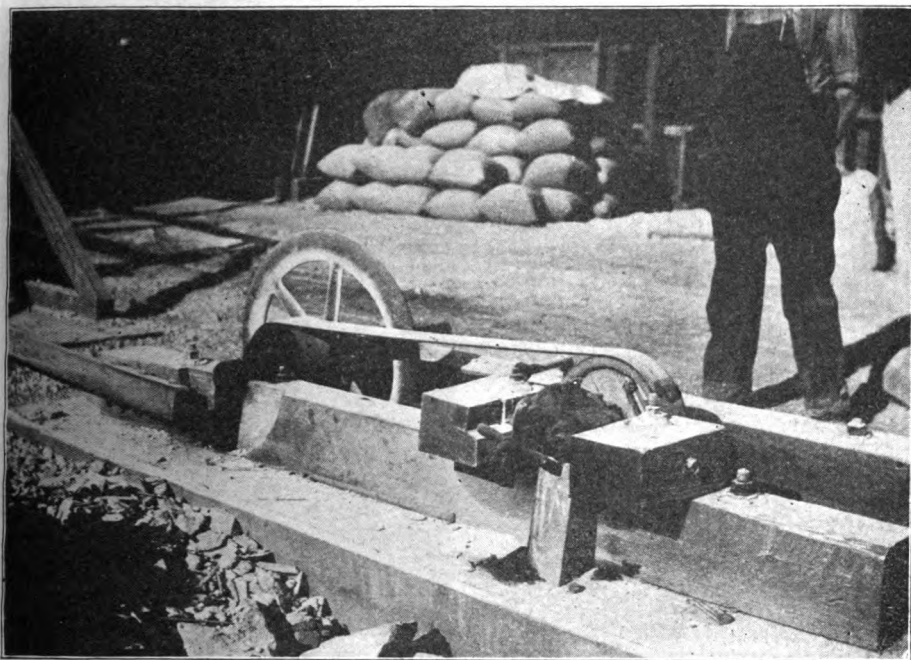
### **What's A Man?**

A little girl wrote the following composition on men:

"Men are what women marry. They drink and smoke and swear, but don't go to church. Perhaps if they wore bonnets they would. They are more logical than women, and also more zoological. Both men and women sprung from monkeys, but the women sprung further than the men."

---

Many a large man is a small citizen.



Little Giant Drill Operating Shaking Screens.

### Novel Use of Little Giant Drill.

Another striking example of the universal adaptability of the "Little Giant" drill is shown in the accompanying photograph. This is a size "C," and is used at the Ashton-Whyte yard of the Utah Consolidated Stone Company, to operate a series of shaking screens which classify granite cuttings into three sizes of poultry grit.

It was necessary at this plant to devise some means of disposing of the rapid accumulations of spalls and cuttings, and the latter have, by this means, been turned into a valuable product which meets with a ready sale.

The pneumatic equipment of the Utah Consolidated Stone Company was furnished by the F. C. Richmond Machinery Company, of Salt Lake City, who supplied them with a very large number of Chicago surfacers, carving tools, plug drills, etc.

Master Mechanic Morrison is entitled to the credit of this unique application of the "Little Giant" drill.

### Fitting the Case.

With a face that vainly endeavored to appear mournful, and eyes that vainly strove to produce a respectable flow of tears, Patrick Murphy O'Dolan strolled into a dry goods store.

"I want ye to tell me," he murmured, "phwat the custom is for th' wearin' iv mournin'?"

"Well," mused the assistant, "of course, it varies. If it's a less near relative, a band of black on the sleeve or hat; or, if it's a friend, just a black tie."

For some moments Patrick Murphy O'Dolan considered.

"Well," he whispered at length, "give me a shoe lace. It's me wife's mither!"

### Trained Horse Wanted.

Anne had been buggy-riding with her beau, William, and the horse had run away. When asked by her mother how it happened she replied:

"Well, you see, William thought he had his feet on the lines."



**"If a Goat Can Climb the Hill, the Little Giant Truck Can."**

This remark was made to the East Mountain Ice Company of Scranton, Pa., before they purchased their Little Giant truck, by Mr. Peter Beyrent, agent for the Little Giant truck at Scranton. The hill in question is very steep and it was the opinion of many who were familiar with conditions that the truck was not made that would do the work and stand up under it. But Mr. Beyrent has had considerable experience with the Little Giant and was willing to back his reputation on it. The distance from the town to the top of the mountain is approximately two miles and a half, and the road is one of the worst in the state of Pennsylvania. The road is so badly washed that it is impossible to coast down the grade, but it is necessary for the car to come down under power almost all the way. A record of the work done by this truck for six weeks showed that it had moved 272 tons of ice. It

has been going over the road twice daily and meeting fully the expectations of its owner.

**Had to Be Careful.**

The young man who eats all 'round the circuit ran against this quick lunch incident the other day:

A fastidious person made his way charily into the place. A tumbler of murky water was thumped before him by the young woman on the other side of the counter.

"What's yours?"

"Coffee and rolls, my girl."

One of those iron-heavy, quarter-inch-thick mugs of coffee was pushed over the counter. The fastidious person seemed dazed. He looked under the mug and over it.

"But where is the saucer?" he queried.

"We don't give no saucers here. If we did some low brow'd come pilin' in an' drink out of his saucer, an' we'd lose a lot of our swellest trade."



### Doubles His Business with a "Little Giant."

"I am sending you a picture of the 'Little Giant' truck I am using, as I thought it would interest you," writes Geo. H. Soley, Davisville, Pa. "Before I bought this truck I used to leave home, eighteen miles from Philadelphia, at 4 o'clock in the morning and seldom got back before 9 or 10 o'clock at night during the busy season; with the truck I leave at 7 and am always home long before dark.

"During the asparagus season just closed, instead of cutting the night before I cut in the morning, left home at 7:30 and was serving my customers on Broad street, Philadelphia, by 8:45, something nobody else in the city is doing. I am doing this with all my garden truck, and it has resulted in doubling my business, in fact I have more trade than I can take care of.

"I have never had the slightest trouble with the car itself, and it is me for the 'Little Giant' every time."

### Electrical Daffodils.

If series fields, will pole pitch?

If magnet chokes coil, will lightning arrester?

If potential is high, will a step-down transformer?

If the switch is open, will the spark jump?

If the current lags, will the battery booster?

If the solenoid isn't a sucker, will the current breaker?

If the commutator sparks, will the fuse blow?

If the cable reels, will copper conductor?

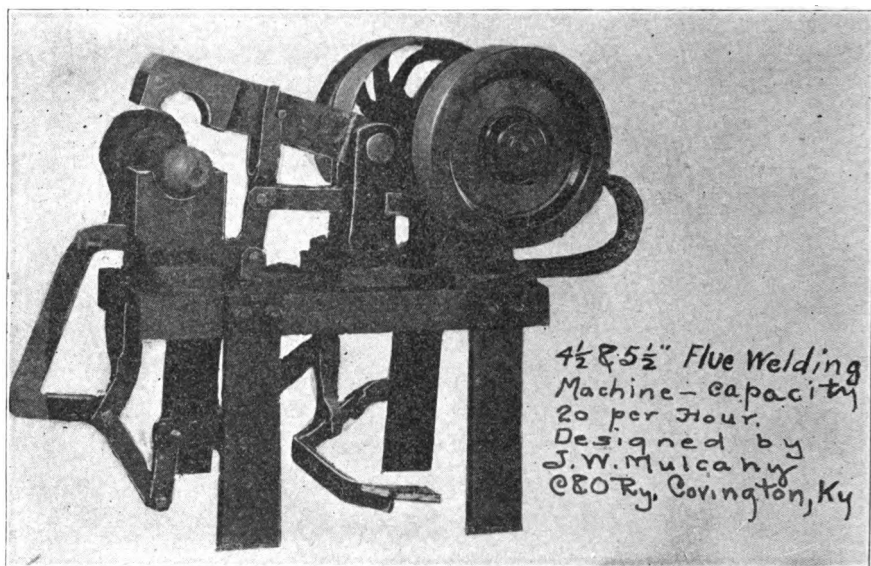
If ohms offer resistance, will a street car controller?

### Pro Bono Publico.

"Good morning. I came to tune your piano."

"Piano? But I didn't send for you."

"No ma'am; but the neighbors said I ought to call."



Mulcahy Flue Welding Machine.

#### Superheater Flue Welding Machine.

The illustration shows a machine for welding  $4\frac{1}{2}$ -inch and  $5\frac{1}{2}$ -inch superheater flues, which was designed by James W. Mulcahy, foreman blacksmith shop of the Chesapeake & Ohio shops at Covington, Ky., and which was built at the shops. The machine produces a weld that is the most perfect in every respect. The welding arm or hammer is actuated by a belt-driven shaft. By pressing on the foot lever the motion is transmitted through a system of levers until the upright arm which holds the striking hammer is drawn back, thus allowing the hammer to get into action.

The machine was built out of old scrap car axles at a total cost of \$122, and its capacity is 20 superheater flues per hour, or 180 flues in nine hours. It is operated by three men, whose rates are 24.5 cents, 22.4 cents and 15 cents per hour. The cost per flue for welding is a fraction over 3 cents.

A horse can't or won't talk. He has horse sense!

An ounce of prevention is better than a pound of repentance.

#### An Analogy.

"A man resembles a cigar."

I heard a jester say;

"For he, like a cigar, is bound  
To meet his match some day."

Just so, and then the man flares up  
And like the "weed" gets red,  
Which as a rule precedes the fact  
Each soon doth lose his head.

A man, like a cigar, gets "short,"  
And sometimes of the town  
Becomes the butt—he also may  
Be by a friend "thrown down."

Some weeds, and some men, too, are  
rank,

Some scarcely have a flaw,  
Some are like actors, though well puffed  
They can't be made to draw.

Wives see another likeness still  
(Though this their husbands flout)  
A man, like a cigar, is spoiled  
If he is let go out.

And lastly, this analogy  
Their finish does not mar;  
Both come to ashes in the end,  
The man and the cigar.

—Boston Transcript.

# Don't Pump Your Life Away

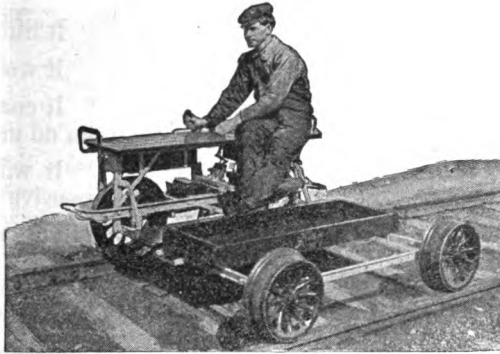
on a Hand Car or a Velocipede When You Can Ride in an Automobile.

**The No. 2 Rockford Car is a light, speedy, serviceable runabout for the rails.**

**SIMPLE in  
construction**

**EASY to  
operate**

**EASY to  
pay for**



No. 2 Rockford Car

**Send for  
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No. 43**

**Chicago Pneumatic Tool Co.**

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*Branches Everywhere.*

## A Dollar—What Is It?

"A dollar—what is it? 'A piece of paper,' says one. No, more than that. 'Circulating medium,' says one. No, more than that. 'Something that you borrowed from your friend,' says another. No, more than that. 'That dollar is a part of my life. I worked hard yesterday and earned a dollar. I might have spent it in a minute's time and been no richer for the investment, but I did not spend it. It was the only tangible thing I had out of the whole day's existence. The joy, the opportunity, and the privileges of the day had gone into the silence of the eternity that has passed. That dollar is my yesterday. I may spend it, and start tomorrow bankrupt. I may keep it and tomorrow need not work at all, because my yesterday's dollar will pay for the services of one who may do the work better than myself, or, I may work again tomorrow and the next day, and the next, and save my yesterdays until I have long years of yesterdays, strong and capable of toil, who shall

labor for me and keep me in comfort when my body is too weak to toil. A dollar is part of a man's life, and as he guards his health to take care of the future, so should he guard his dollars to secure the full service of the past."—Geo. Wood Anderson, in the National Magazine.

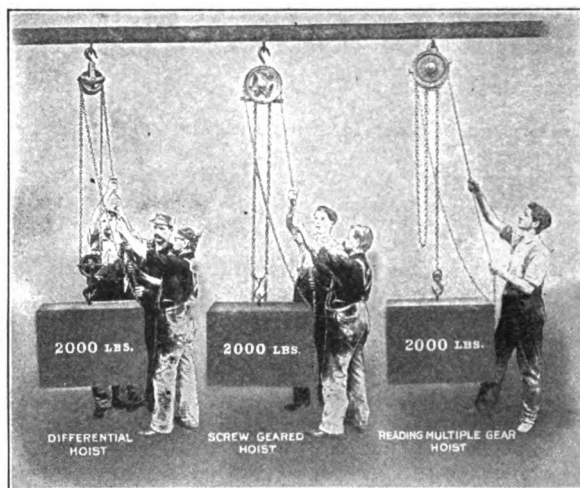
## English As It Is Taught.

A school teacher read the following story to her first language class and requested each pupil to write the story from memory for the next day's recitation:

"See the cow. Is she not a pretty cow? Can the cow run? Can she run as fast as the horse? No, the cow cannot run as fast as the horse."

One little fellow produced the essay as follows:

"Git on 'o de cow. Ain't she a beaut? Can de cow git a gait on her? Can she hump it wid de horse? Nit! De cow ain't in it wid de horse."



## Reading Multiple Gear Chain Block

It lifts quickly.

It works easily.

It enables your men  
to do more work.

It will save you ex-  
pensive repairs.

Order one from any  
Chicago Pneumatic  
Tool salesman or di-  
rect from us.

Try it 30 days. Then return it at our expense if not satisfactory.  
Could we make a fairer offer?

# READING CHAIN BLOCK COMPANY

READING, PA.

### Yet He Answered All Right.

A young German was being tried in court, and the questioning by the lawyers on the opposite side began:

"Now, Muller, what do you do?"

"Ven?" asked the German.

"When you work, of course," said the lawyer.

"Vy, I work——"

"I know," said the lawyer, "but what at?"

"At a bench."

"Oh, Lord!" groaned the lawyer, "where do you work at a bench?"

"In a vactory."

"What kind of a factory?"

"Brick."

"You make bricks?"

"No; de vactory is made uf bricks."

"Now, Muller, listen," said the lawyer; "what do you make in that factory?"

"Eight tollars a veek."

"No, no! What does the factory make?"

"I dunno; a lot uv money, I tink."

"Now listen! What kind of goods does the factory produce?"

"Oh," said the German, "good goods."

"I know, but what kind of good goods?"

"The best."

"The best of what?"

"The best there is."

"Of what?"

"Of dose goods."

"Your Honor," said the lawyer, "I give up."

### The Morning's Surprise.

Simeon Easy, after living sixty years on a farm, finds his quarters on ship-board somewhat cramped. He obviates the lack of space, however, by stowing his trousers and shoes into a round cupboard in the side of the vessel on going to bed.

Seven a. m. Startling disclosures!

"Steward, last night I put my clothes in that cubby-hole, an' they ain't there now."

"That ain't a clothes press; that's a port-hole, sir."

Dumb waiters are all right in their way, but they won't answer.



Hope helps some if a man is a hustler.

And many a good physician goes from bad to worse.

Cold cash melts away faster than most of us can freeze to it.

Some men tell their wives a lot of things that never happen.

A silly woman imagines that every man is a bore if he has good sense.

There are occasional moments in the life of a married man when he's glad of it.

When you hear a man making cynical remarks about the fair sex one of the species has used him for a doormat.

All the pleasure evaporates when a woman has to suffer in silence.

It's a case of all work and no play with many a near dramatist.

Marriage teaches a man that it's a waste of time to argue with a woman.

Wild oats sown when the sun shines are usually harvested under a cloud.

From his neighbor's point of view it is impossible for any man to be perfect.

One kind of a cereal story is the rice thrown after the departing bride and what she married.

Married men are easily convinced that they get all the punishment coming to them right here on earth.

During courtship she expects him to be all heart, but after marriage she is satisfied if he is all pocketbook.

### The Way to Success.

"The secret of success," the stamp said, "is sticking to it."

"To succeed," said the knife, "be bright and sharp."

"Keep up to date," said the calendar.

"Aspire to greater things," said the nutmeg.

"Don't knock—it's old-fashioned," said the electric bell.

"Do a driving business," said the hammer. And the barrel added: "Never lose your head."

"Make light of everything," the fire observed cynically.

"But always keep cool," said the ice.

### Meddlesome Philanthropy.

A little girl was weeping bitterly in the street, greatly to the concern of sympathetic passersby. At last a benevolent old gentleman approached the little maid and, patting her on the shoulder, enquired what was the matter.

"I've lost a penny, sir," was the reply, given between sobs. The old gentleman promptly thrust a hand into his pocket and brought out a penny which he handed to the child.

"Oh, 'oo wicked ol' man; 'oo had it all the time!"



# Chicago Pneumatic Tool Company

Hand Drills and Portable Compressors



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FISHER BUILDING CHICAGO  
50 CHURCH STREET NEW YORK

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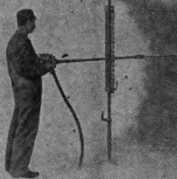
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- 149. Chicago Portable Mine Hoist.
- 150. Chicago Coal Drills.
- 151. Chicago Slogger Rock Drills.
- 152. Chicago Gatling Drills.
- 153. Chicago Sinker.
- 154. Chicago Stoper.
- 172. Chicago Plug and Feather Drill.

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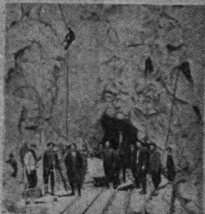
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No. 5 Chicago Plug and Feather Drill



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Published Monthly in the Interest of Compressed Air and Electrical Appliances  
By THE IDEAL POWER PUBLISHING COMPANY  
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February, 1915.

No. 4.

## HOW MURPHY PUT IT OVER

*A Play: In Four Acts*

By C. I. HENRIKSON

Presented by  
CHICAGO PNEUMATIC TOOL COMPANY  
1010 Fisher Bldg. Chicago Branches Everywhere 50 Church St. New York  
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### Cast of Characters.

*Blake*, the Boss—Superintendent of the Grand Central Boiler and Manufacturing Co. Somewhat old-fashioned and set in his ways, but a good fellow.

*Murphy*—An Ambitious Riveter. A pioneer in the use of air guns. Somewhat hot headed, but knows his business. A man with the courage of his convictions.

*Finnegan*—Also a Riveter. Not so courageous as Murphy. Very much under the thumb of Blake.

*Dawson*—A Representative of the Chicago Pneumatic Tool Company. Has unbounded confidence in his house and his line.

Riveters, helpers and heater boys.

### Time.

Yesterday.

### Place.

The riveting yard of a large boiler and manufacturing company in the middle west not far from Chicago.

### ACT I.

*Scene*—Riveting yard of large boiler and manufacturing company. Several large, new boilers under construction at left. Sev-

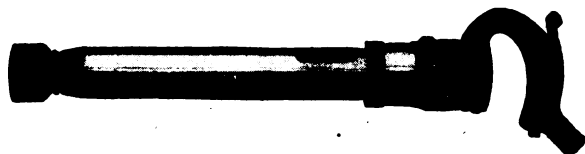
eral riveters, including Murphy and Finnegan, with their helpers busy with air guns. Ruby Steel Portable Storehouse at right. All workmen busy as bees as curtain rises. Five or six riveting hammers or "air guns" with incessant tattoo, making enough racket to wake the dead. Suddenly Murphy's hammer stops. He shakes it up and down and sidewise and then with a curse throws it to the ground and stamps around, continuing to swear a blue streak. The rest of the riveters stop working and grin. Murphy disconnects the hammer and walks to Center as Blake the Boss steps out of the Ruby House, locking the door after him.

*Blake*—What's the matter, Murphy?

*Murphy*—Oh, the blamed thing has balked again. The fourth time today and me on piece work with six kids and the old woman on me coat-tails. I tell you, Mr. Blake, if you'll excuse me for telling you again, them Exwyzee guns are no good. They're no good, I say.

*Blake*—Go easy, man, go easy. Remember your failing. I don't believe you hold that hammer right. Some dirt may have got into the valve.

# And Now Comes The No. 11 Boyer Riveting Hammer



**FOR DRIVING UP TO 1½ INCH RIVETS**

This is in terms of steam tight work such as on retorts and digesters where the seams are subject to high pressures and on marine boiler work where uniformly high class workmanship is absolutely necessary.

This hammer is also well adapted for expanding super-heater flues,—and there are no doubt many special purposes to which a pneumatic hammer of this capacity can be used.



Rivet Set (Parker Style)

Owing to the extremely heavy blow of the No. 11 Boyer Hammer and the unusually severe punishment it inflicts on the rivet set, the Parker set is used. As will be seen from the cut, the Parker set has a wide tapering shoulder which enables it to better absorb and withstand the effects of the heavy blows of this hammer.

WRITE FOR QUOTATIONS ON THIS NEW  
POWERFUL TOOL.

## CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Building, Chicago

50 Church Street, New York

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*Murphy*—Yes, if it isn't one thing it's another with these Exwyzees. They may run all right for a month or two, but after that it's good night. You've got to treat them like babies and then they won't do anything for you. I want to tell you that the Boyer guns I used in Chicago never stopped like these do. And when they did we could get them fixed. Get them fixed. That's what I said. And I want to tell you I ain't the only one kicking on these guns.

*Blake*—Take it back to the shop and get a new hammer for it.

(At this juncture another gun stops working. The riveter shakes it without avail. Then disconnects it and walks off at right with gun on his shoulder.)

*Murphy*.—Did you see that? He'll get it fixed and let it work a few minutes and then it will stop again.

*Blake*.—You don't appreciate the construction, *Murphy*,—

*Murphy*.—Construction be damned. Who cares for construction. You want boilers and I want guns that will drive rivets in 'em. That's what we want.

*Blake*.—Say, *Finnegan*, come here. You like those guns, don't you?

*Finnegan*.—Yes.

*Blake*.—How long have you used these Exwyzee guns?

*Finnegan*.—About six months.

*Blake*.—They're good guns, aren't they?

*Finnegan*.—Yes.

*Blake*.—Did you ever use the Boyer?

*Finnegan*.—No.

*Murphy*.—Yes, and it's no secret that *Finnegan*'s wife has to rub his back with arnica every night. So his wife told mine confidentially. It takes a strong man like me to stand the fearful vibration of them Exwyzees.

*Blake*.—Just keep your shirt on, *Murphy*, don't get excited. You know what happens to a rivet snap when you don't cool it off once in a while.

*Murphy*.—I always get hot under the collar over these Exwyzee guns. A man like *Finnegan* that doesn't know any better isn't a judge. The Boyer hammer puts the rivets down faster, stays on the job and don't jar you all to pieces. But I suppose we'll have to use what we get. I'll have to bring this

one back to the shop and get another for it.

Exit *Murphy* at right with gun on his shoulder.

Enter *Dawson* at left with sample case.

*Dawson*.—Hello, *Blake*. Glad to see you. How is business?

*Blake*.—So, so.

*Dawson*.—When are you going to put in some real riveting guns?

*Blake*.—Just as soon as I can't get any more Exwyzees. I've been telling you that for a year. We're satisfied and we don't want to monkey around—trying all sorts of things—when we've got just what we want. I'll admit the Boyer Hammer is a good hammer, but I think the Exwyzee is just a little better.

*Dawson*.—Yes, and for over a year like a good fellow I've given you a chance to be shown. Let me demonstrate this Boyer now. I won't leave it with you unless you want me to.

*Blake*.—Well, go to it. Here, *Finnegan*, come here and run this Boyer gun so I can get rid of this guy.

(Enter *Murphy* with new Exwyzee on shoulder. He sizes up the situation, then cautiously lays hammer down.)

*Murphy*.—Mr. *Blake*, I'll give one day's pay to run that hammer to show you what I can do with it.

*Dawson*.—Back to the woods. Let *Finnegan* do it.

(*Finnegan* with the Boyer and another riveter with the Exwyzee are put to work, one against the other on two boilers. *Dawson* and *Blake* look on with watches in their hands. The Boyer hammer wins out.)

*Murphy*.—Hurrah for the Boyer!

*Blake*.—Shut up.

All the riveters form a group around *Finnegan* and examine the Boyer carefully.

*Blake*.—I suppose that's a special performer that you carry around just to make trouble.

*Dawson*.—Not on your life. I sold my sample yesterday. One of my customers took it away from me. Said he couldn't wait a day on the factory. I telegraphed for this one and it came in to the hotel from the factory this morning.

*Blake*.—Well, nothing doing today.

## ACT II.

(Three days later.)

Scene same as act I. Same riveters busy with Exwyzee guns. Same noise and racket. Same guns stopping occasionally. Same swearing. Suddenly Murphy stops his work and begins laughing.

*Murphy.*—Ha! Ha! Ha! Boys, I've got an idea.

*Chorus of Riveters.*—We don't believe it. You'll have to show us. You must have gotten it out of IDEAL POWER.

*Murphy.*—Be that as it may, when I show you, you'll all turn round and eat out of my hand. I've got the greatest scheme that ever came over the pike. I'm going to get a Boyer hammer of my own. I'm going to buy one.

*Chorus of Riveters.*—Where are you going to get the money?

*Murphy.*—I'm going to make the boss a proposition to take it out of my pay.

*Finnegan* (cautiously).—Put me next to the scheme, Murphy. I can't tell the boss, but these Exwyzees are getting my goat.

*Murphy.*—They got mine long ago. But I'm going to have a Boyer if it takes a leg.

(Enter Blake. At which all riveters get busy and go ahead with their work.)

*Murphy.*—Mr. Blake, I want to talk with you a minute.

(Both walk to center.)

I want to make you a proposition. If I buy a Boyer gun can I run it here?

*Blake.*—Sure, Mike.

*Murphy.*—Well, look here. That ain't all. If you get the hammer in here on trial and eventually pay for it, how long time will the firm have to pay for it?

*Blake.*—Ten days' trial and thirty days more to pay the bill.

*Murphy.*—Well, suppose I start now to pay you \$2.50 a week for the hammer by letting you take it out of my pay. Will you finance me to that extent? That is my proposition.

*Blake.*—Well, I don't—

*Murphy.*—I'll let you take \$5.00 a week out of my pay.

*Blake.*—I—well—you see—

(At this juncture an Exwyzee hammer stops working.)

*Murphy.*—My Boyer won't do that—when I get it.

*Blake.*—I don't like to mix the hammers.

*Murphy.*—Mix nothing. Boyers can't mix. They're alone in a class by themselves.

*Blake.*—Come into the office after a bit. I want to talk with you.

## ACT III.

(Two days later.)

Scene same as before. Murphy and Finnegan examining a Boyer hammer which Murphy proudly wields.

*Murphy.*—Well, I got it.

*Finnegan.*—Congratulations, Murphy. You'll be president some day. And that isn't all. I want to tell you what we boys have done on the Q-T. We've collected a little purse for you and the first four payments on your Boyer won't cost you a cent. Here (handing him a ten spot).

*Chorus of Riveters.*—Speech! Speech!

*Murphy.*—Boys, I'm not a speechmaker. All I know is that the Boyer is the best riveting gun made and no one can bluff me out of it. I'm for the Boyer every time. If I didn't think that this little show of your confidence in me would mean more money for you in time, I couldn't take it. As it is, I'll borrow it from you. And you all now watch my smoke. I thank you. boys.

## ACT IV.

(Six months later.)

Same scene. Same riveters but all using Boyer Hammers. Everybody happy.

(Enter Blake from right.)

*Blake.*—Murphy, come over here. I've got a surprise for you.

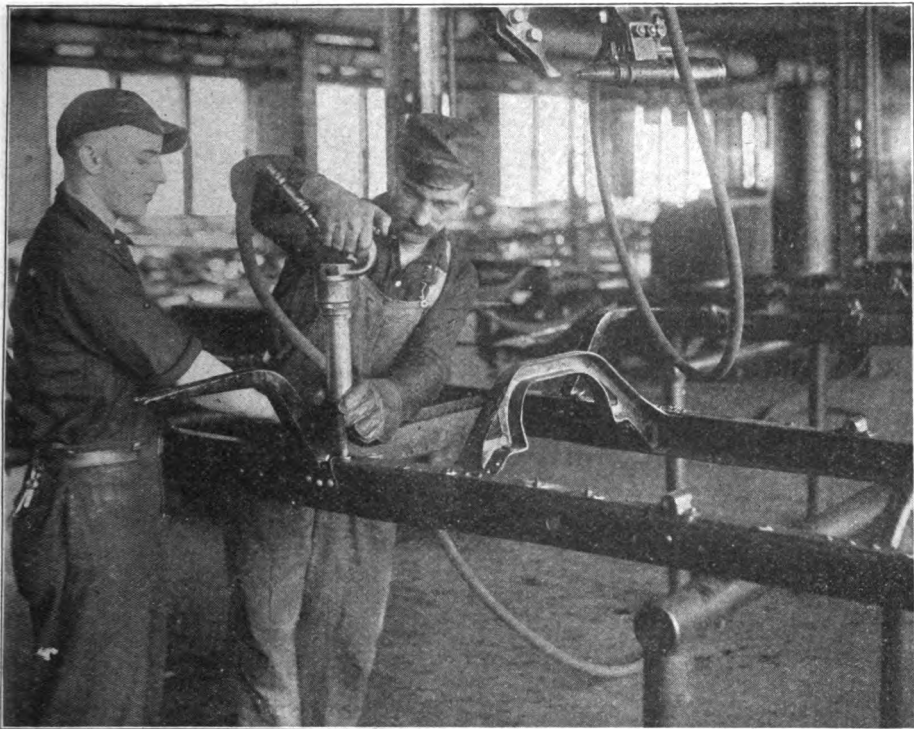
*Murphy.*—You can't surprise me. Ever since you let me get that Boyer, I can't be surprised any more.

*Blake.*—Quit your kidding, old man. Here is a surprise for you. You have paid for the Boyer out of your own wages but the firm won't stand for it and here is your money back.

*Murphy.*—Some mistake, I'm sure. That hammer didn't cost me anything.

*Blake.*—Yes, it did. We took \$2.50 a week out of your pay.

*Murphy.*—Yes, but I earned \$3 a week more with the Boyer.



Boyer Hammer driving rivets in chassis of Studebaker car at the Detroit factory of the Studebaker Company. Boyer Yoke Riveter with special yoke is shown suspended from special tackle overhead.

*Blake.*—Well, anyway here's your money back.

*Murphy.*—Come on, boys. This is your money. You backed me up in this and helped me out.

*Blake.*—You fellows in this deal too?

*Finnegan.*—Every one of us.

(Enter Dawson.)

*Dawson.*—Hello, Blake. How is business?

*Blake.*—Fine.

*Dawson.*—How are the Boyer guns working?

*Blake.*—Fine.

*Dawson.*—How are you?

*Blake.*—Fine.

*Dawson.*—And how are all the boys?

*Chorus.*—Fine.

*Dawson.*—I want to thank you, Blake, for that last order of six.

*Blake.*—I was glad to give it to you. We're turning out more work now than

ever before and I'm getting the credit for it. I owe it to you and the Boyer and to these boys here.

*Chorus.*—We're all satisfied. We should worry. (Murphy places a Boyer hammer on ground at Center. Dawson, Blake, Murphy, Finnegan and the others join hands and circle round it, as curtain falls.)

Moral: Stick to the Boyer.

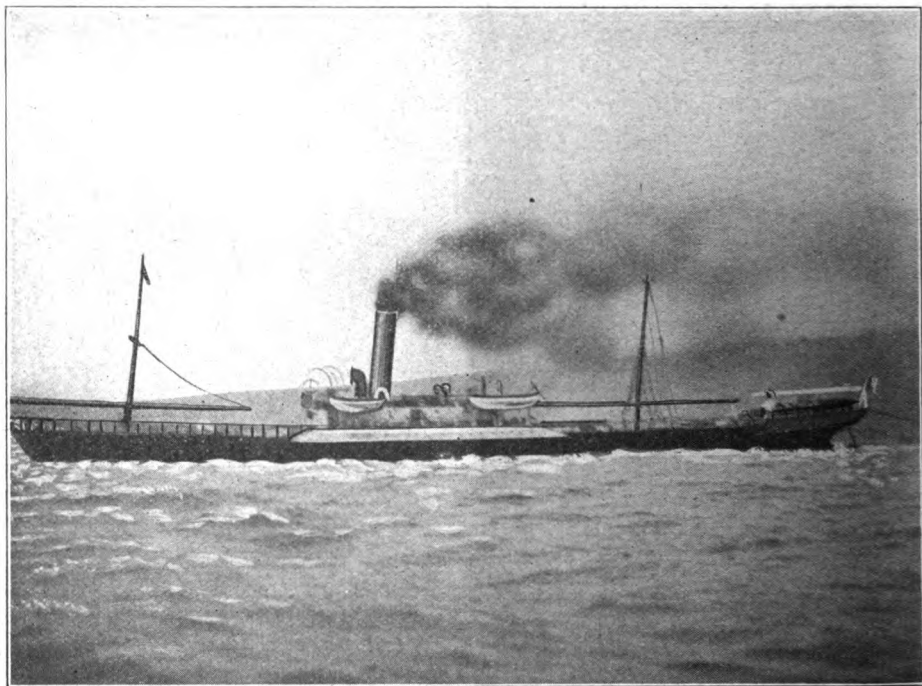
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### Remembered.

Archdeacon Fisher was not without a little vanity in respect to his sermons, and once received a quiet hint from Constable on the subject. Having preached an old sermon once, which he was not aware that Constable had heard before, he asked him how he liked it.

"Very much, indeed, Fisher," replied Constable. "I always did like that sermon."





The SS. Mina Brea.

### Raising Sunken Vessels With Compressed Air.

The idea of raising a sunken vessel by displacing the water from the interior with compressed air has been demonstrated successfully many times, the great danger being the possibility of the vessel coming to the surface and turning over as has happened, where intelligent engineering skill was not employed in the raising operation. Messrs. Orchard Bros. of Antofagasta, Chile, recently undertook a job of this kind and write as follows concerning a 'Chicago Pneumatic' Class G-SS 9x9x11 compressor used in the work:

"This we only purchased some time ago, and we had an opportunity to make use of it lately, as we undertook a contract for salvage of the petroleum steamer 'Mina Brea,' which vessel struck a rock some thirty miles from Antofagasta, and had her bottom plates completely damaged. The steamer was considered a total loss, when the idea occurred to us to apply compressed air at

sixteen compartments. In forty-eight working hours the steamer was absolutely saved. The cargo of petroleum, some 5,000 tons, was practically all saved. We enclose some photographs showing your compressor working on deck on board the steamer, which has now been taken south to the Chilean dockyard for final repairs. We shall later on send a new order for another steam-driven compressor to replace the one which was sold to and taken by the 'Mina Brea'."

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### An Expert.

"You say this man is no chicken stealer?" inquired the judge.

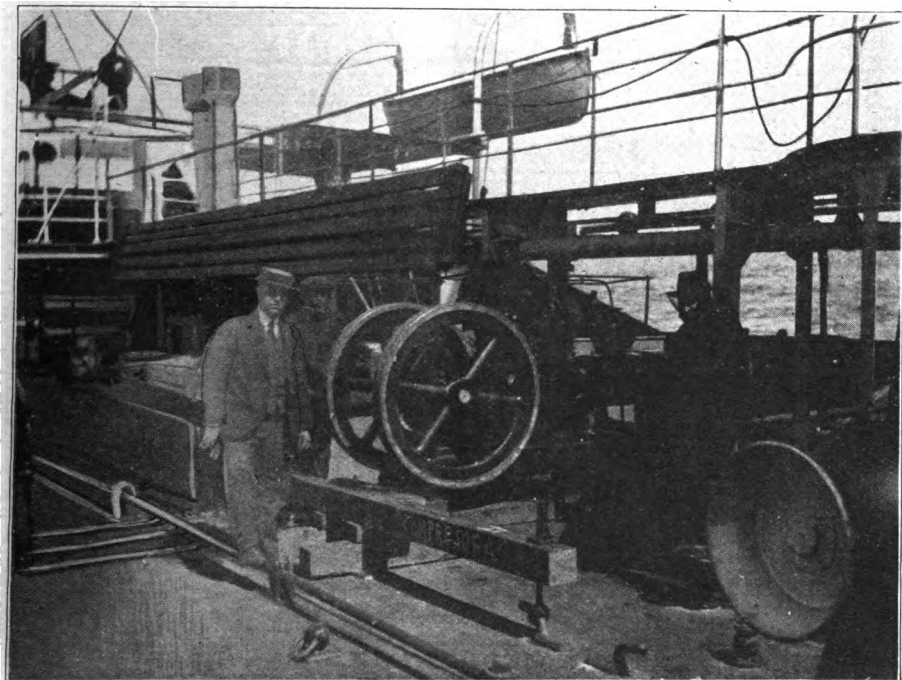
"Yassuh," replied Mr. Erastus Pinkley. "Dat's what I said."

"What do you know about the facts in this case?"

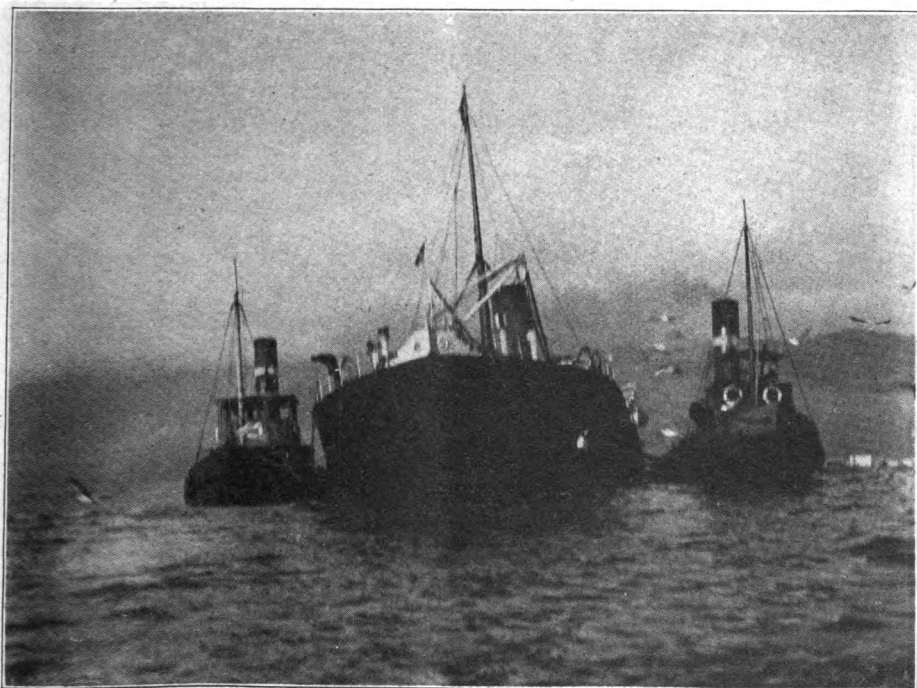
"I isn't 'sposed to know nuffin 'bout de facks in de case. I is an expert witness foh de defense."

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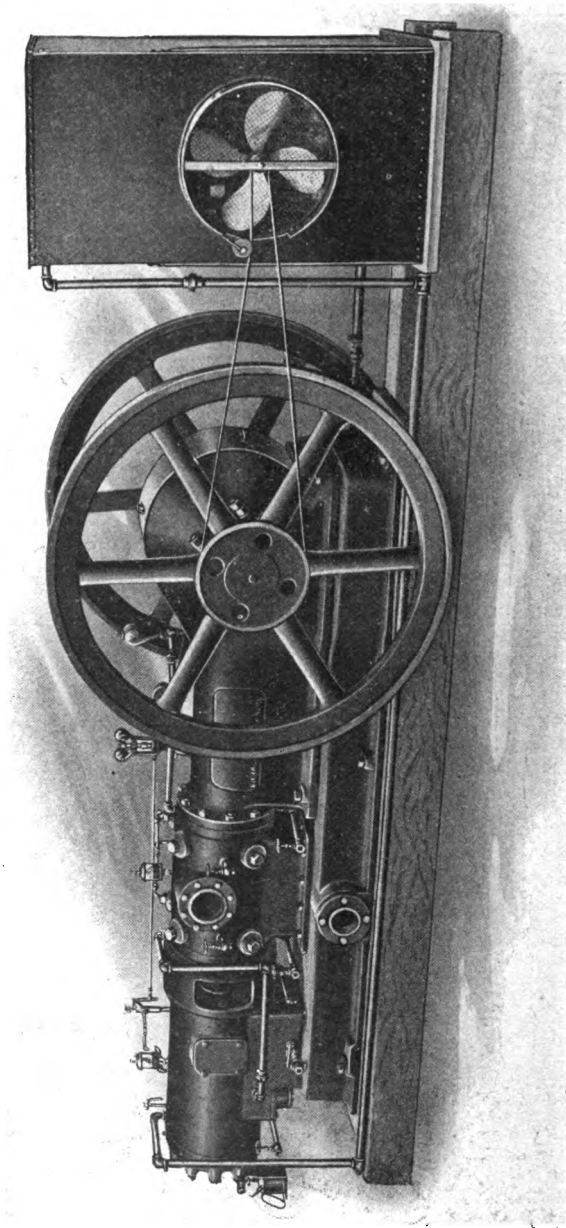
Easy money is easy to get rid of.



Showing "Chicago Pneumatic" Class GSS 9x9x11 Steam Driven Compressor on deck of Mina Brea.



Showing position of Mina Brea when Orchard Bros. took the contract for salvage. Tug boats on either side pumping water out of her to keep her afloat.



"Chicago Pneumatic" Type N-SO Fuel Oil Driven Compressor Mounted on Skids for Semi-Portable Use.



COLLECT  
A6205 PR 71/NL \$1 & 35 VIA KINGMAN COUNT -

FRISCO ARIZONA NOVEMBER 12 1914

CHICAGO PNEUMATIC TOOL CO

NEWYORK

N-S O FUEL OIL COMPRESSOR HAS BEEN WORKING  
STEADILY TWO MONTHS TWENTY FOUR HOURS PER DAY AND HAS  
GIVEN ENTIRE SATISFACTION STOPPING ONLY TO FILL GREASE CUP ON  
ECCENTRIC AND CLEAN OUT GAS CYLINDER ONCE EVERY FOUR WEEKS  
USING STANDARD OIL CALIFORNIA SPECIAL GAS OIL FORTY TO FORTY  
THREE DEGREES BAUME AND IS BROWN IN COLOR DUE TO THE  
ASPHALTUM BASE CONSUMPTION THIRTY GALLONS PER NINE HOUR DAY.

A B CALHOUN

### What an N-SO Compressor Is Doing.

On Oct. 2d, prior to the receipt of the above-mentioned telegram, Mr. Allan B. Calhoun, superintendent of Arabian Consolidated Mines, wrote to Don A. Carpenter & Co., El Paso, Texas, Southwestern agents for the Chicago Pneumatic Tool Company, as follows:

"In answer to your letter of September 11th, I have the pleasure in stating that we are getting very satisfactory results from our new N-SO 'Chicago Pneumatic' low degree fuel oil driven compressor.

"It has been in operation one month and I find it comes up to all representations in regard to both fuel economy and general results.

"I consider this compressed air unit most suitably adapted for a prospect or a mine in the early development stages."

For further information regarding the N-SO type of "Chicago Pneumatic" compressors readers are invited to consult Bulletin 34-K, consisting of twenty-four pages of interesting cuts and details. A special feature of this bulletin

is a compilation of figures giving in detail the comparative cost of operating air compressors by fuel oil, electricity and steam. You can get it by addressing our nearest branch office. It won't hurt to say you saw it in Ideal Power.

### Where Soap Was Needed.

While the agent was selling farm machinery at the house, the friend at the gate held his horse, and a conversation took place with the small boy of the family.

With grave incredulity he was saying: "Are you sure you are only nine years old? I think there must be some mistake."

The boy was positive, but to make sure, "Ma," he called, "ain't I just nine years old?"

"Yes, son."

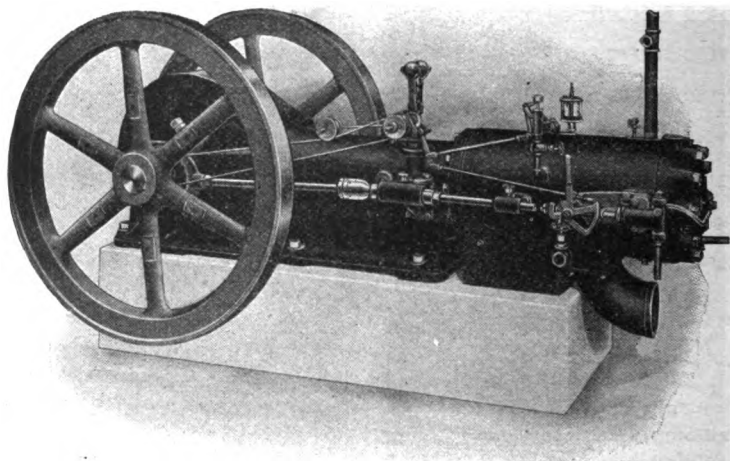
After a time he ventured: "Say mister, what made you think I was more than nine years old?"

"Why," said the stranger, "I couldn't understand how you could get so dirty in nine years."

# "Giant" Fuel Oil Engine

For Pumping, Electric Lighting and all Power Purposes

**10 H. P. for 3 Cents Per Hour**  
**Cheaper than Electricity**  
**Better than Steam**



"GIANT" FUEL OIL ENGINE

<p><b>Will Run on</b></p> <p><b>Has No</b></p> <p><b>Has</b></p>	<p>Crude Oil, Fuel Oil, Engine Distillate, Residuum, Kerosene, Alcohol, Naphtha, Solar Oil, Gasoline.</p> <p>Valves, Carburetor, Magneto, or other Electric Firing Devices.</p> <p>Valveless Two Cycle Power Cylinder, Governed Fuel Injection, Hot Plate Ignition, Self-Oiling Lubrication, Crosshead Construction, Perfect Scavenging, Rugged Enclosed Frame, Balanced Cranks.</p>
--	--

**Eight Sizes—12 to 100 Horse Power**

*Prices and information on request and ask for Bulletin 34-W.*

**Chicago Pneumatic Tool Company**

**1014 Fisher Bldg.  
Chicago**

**Agencies and Branches  
Everywhere.**

**50 Church Street  
New York**

# Duntley Electric Hammer Drill

## Universal Type

*Patented February 18, 1913. Others pending.*



This tool is equipped with a universal motor, (patents covering which as applied to portable tools are controlled by this company), and will operate interchangeably on direct or alternating current. It is designed for **drilling in stone or concrete** where a hammer blow is necessary to do effective work. The blow delivered on the drill steel is produced by pneumatic impact and is very effective. The tool is well balanced and all parts readily accessible. A thumb switch for the control of the electric current is manipulated just as in the well known pneumatic hammers. All bearings throughout are of the latest ball type, provision being made for the easy lubrication of all revolving and reciprocating parts. In drilling down holes in stone or concrete the powdered cuttings collect rapidly and not only absorb and waste much of the force of the blow, but tend to choke up the hole making it difficult to remove the bit. A special feature of the Duntley Electric Hammer Drill is the live air device for cleaning the hole of cuttings while drilling. This makes it possible to deliver the full force of the blow on the solid stone or concrete, and as there is no choking up there is no difficulty in removing the bit. Hollow steels for this purpose are furnished in diameters of from  $\frac{1}{4}$  inch to 1 inch, and from 5 inches to 10 inches long. (Longer on special order). For holes smaller than  $\frac{1}{4}$  inch solid star point steels can be furnished.

ily accessible. A thumb switch for the control of the electric current is manipulated just as in the well known pneumatic hammers. All bearings throughout are of the latest ball type, provision being made for the easy lubrication of all revolving and reciprocating parts. In drilling down holes in stone or concrete the powdered cuttings collect rapidly and not only absorb and waste much of the force of the blow, but tend to choke up the hole making it difficult to remove the bit. A special feature of the Duntley Electric Hammer Drill is the live air device for cleaning the hole of cuttings while drilling. This makes it possible to deliver the full force of the blow on the solid stone or concrete, and as there is no choking up there is no difficulty in removing the bit. Hollow steels for this purpose are furnished in diameters of from  $\frac{1}{4}$  inch to 1 inch, and from 5 inches to 10 inches long. (Longer on special order). For holes smaller than  $\frac{1}{4}$  inch solid star point steels can be furnished.

### General Data, Size No. 0

Wound for 110 or 220 volts (Universal Type to operate on either D. C. or single phase A. C.)

Maximum capacity, in stone or concrete.....1 inch  
Weight.....21 $\frac{1}{2}$  lbs. net  
Overall length.....17 $\frac{1}{2}$  inches

### Equipment:

- 10 ft. electrical conductor with Edison plug.
- 2 drill steels (specify diameter and length when ordering.)

### CODE WORDS:

110 Volts  
Monavirly

220 Volts  
Monaviror

*Write for Prices*

## CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Building  
CHICAGO

*Branches Everywhere*

50 Church Street  
NEW YORK

# IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air  
and Electrical Appliances

BY THE

**IDEAL POWER PUBLISHING CO.**

**1014 Fisher Building**

**CHICAGO, U. S. A.**

C. I. HENRIKSON

Editor

Vol. 11. FEBRUARY, 1915. No. 4.

## TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 50 cents per year

## ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our  
subscription list.

### Now Is the Time to Have Your Pneumatic Equipment Put in Good Working Order.

Twelve years ago a Class "F" "Little Giant" drill was shipped from our factory and was recently returned to us for repairs for the first time.

The following report of a test of its performance is interesting, for it shows how wasteful these machines become when not kept in proper repair, although they may be apparently in operative condition. This particular machine had been used right up to the time of its return for repairs and to all appearances was in good shape.

In the test on a  $\frac{7}{8}$  inch hole,  $\frac{7}{8}$  inch deep per minute was drilled, requiring 7 feet of compressed air. Compare this with the performance of a new machine, which drilled  $2\frac{3}{4}$  inches per minute on  $4\frac{1}{2}$  feet of compressed air.

The old machine required, therefore, four times as much air to operate it and it required three times the time to do it in as compared with a new machine. If it cost \$2 per day in wages to operate a new drill, \$6 would be spent for the same purpose in operating the old one, evidently a waste of \$4.

If time were an object it would take until the day after tomorrow to finish what might have been finished today.

Estimating the cost of compressed air for operating a new machine at 54 cents per 10 hours, when a steam-driven compressor is used, we have a cost of air of \$2.16 for the old machine, or a waste

of \$1.62. This, plus the \$4 waste of wages, makes a total waste of \$5.62 per day.

This old machine was one of 50 in use in a large industrial plant, and estimating that each machine operates 25 per cent of the time, the net waste would be \$70 per day, which would purchase a new machine every twenty-four hours.

The saving on air per year per machine, figuring 25 per cent of time in use, would amount to about \$125. With only slight attention, such as careful oiling and seeing that parts are kept tight, an average of one-half hour per day would amount to about \$40 per year.

With the estimated saving per year of \$125 and the cost of proper care per year, estimated at \$40, there would still be a net saving of \$85, or more than enough to purchase a new machine at the end of the year. It would therefore be more economical to throw the machine into the scrap heap and buy a new one than to continue using the old worn one under the conditions above stated.

These figures are conservative and may represent a condition that exists in your plant, shop or factory now.

For your guidance in returning tools for repairs, please note the following general shipping directions, which are safe to follow:

Send Boyer hammers, drills, riveters and sand rammers, also Keller hammers, riveters, drills, plug drills, sand rammers and Hummer drills to the Chicago Pneumatic Tool Company, Detroit, Mich.

Electric drills requiring minor repairs only should be sent to the nearest of our stations at Chicago, Detroit, New York, Boston, or the Chicago Pneumatic Tool Company, Erie, Pa.

If the repairs are extensive, send the tools to us at Detroit, Mich., or to the Chicago Pneumatic Tool Company, Erie, Pa.

"Little Giant" drills to the Chicago Pneumatic Tool Company, 1241 E. 49th street, Cleveland, Ohio.

Compression riveters and hoists to the Chicago Pneumatic Tool Company, Franklin, Pa.



Scene in testing department of Cleveland Plant, Chicago Pneumatic Tool Co. Showing a Little Giant Drill breaking some previous records for drilling in the presence of the salesmen's convention. It is in this department that all Little Giant Drills are put through a course of sprouts before they get the official O K from the inspector.

### Annual Sales and Factory Convention.

The annual Chicago convention of the sales and factory forces of the Chicago Pneumatic Tool Company gave place this year to a trip through the company's plants at Detroit, Cleveland, Erie and Franklin, Pa., participated in by the branch managers and factory superintendents. President W. O. Duntley called the convention to order at Detroit plant on Thursday, January 18. Tuesday and Wednesday were spent at Cleveland, Thursday at Erie and Friday and Saturday at Franklin. The party arrived in Erie on Wednesday evening and were taken in charge by Mr. James Burke of the Burke Electric Company, who entertained them at a sumptuous dinner at the Lawrence Hotel. On Friday evening the visitors were guests at a banquet given in their honor by the Franklin Board of Trade. Elaborate ex-

hibits of the company's products were on display at the various plants and methods of manufacture and assembly, and the inspection and elaborate tests that are given the tools were thoroughly demonstrated to the visitors.

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### She Knew.

"My dear," called a wife to her husband who was in the next room, "what are you opening that can with?"

"Why," he said, "with a can opener. What did you suppose?"

"Well," replied his wife, "I thought from your remarks you were about to open it with prayer."

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Mary had a little calf,  
It made her feel quite hurt,  
And that is why she never wore,  
The latest style of skirt.



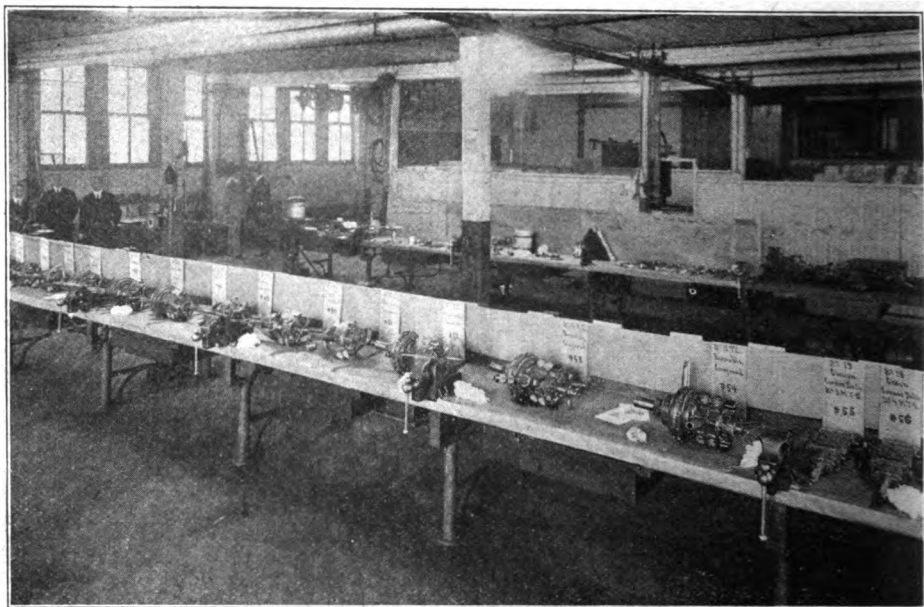


Exhibit of Little Giant Drills at the Cleveland Plant of the Chicago Pneumatic Tool Co. One drill of each size and type placarded with brief specifications was on display for the edification of the salesmen.

### How to Get Good Air Tool Repair Men.

Good men in any line are generally hard to find, but it is especially true of air tool repair men. In the interests of those who are looking for services of this character, as well as of those looking for employment, we have established an employment department in the hope that we can bring the employer and employee together. Every shop where pneumatic tools are used extensively should have an experienced air tool man. If you need one let us know.

#### These Men Want Jobs.

First-class machinist, age 35, steady and sober, especially good on air tools. Can set valves and could take charge of all machinery. Address Ad-1, care Ideal Power.

Pneumatic Tool repair man with sixteen years' experience wants steady job where good work will be appreciated. Address Ad-2, care Ideal Power.

Air Tool man with railroad experience desires to make a change. Could take entire charge of pneumatic tool department. Address Ad-3, care Ideal Power.

A foreman boiler maker with long and creditable experience, with thorough knowledge of pneumatic tools and with best of references, wants position with some railroad. Address Ad-4, care Ideal Power.

A superintendent of steel construction, with twenty-two years' experience, wants to connect up with some reliable concern. Can furnish best of references. Address Ad-5, care Ideal Power.

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#### Poor Smith.

Smith (meeting an acquaintance of the previous evening): "Ha, my boy, got home all right, then?"

Jones (gloomily): "Yes, but my wife wouldn't speak to me."

Smith (enviously): "Lucky fellow; mine did."

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#### Beast of Burden.

Daughter—Shall I take an umbrella to post this letter, mother?

Mother—No, stay in the house; it isn't a fit night for a dog to be out; let your father post the letter.

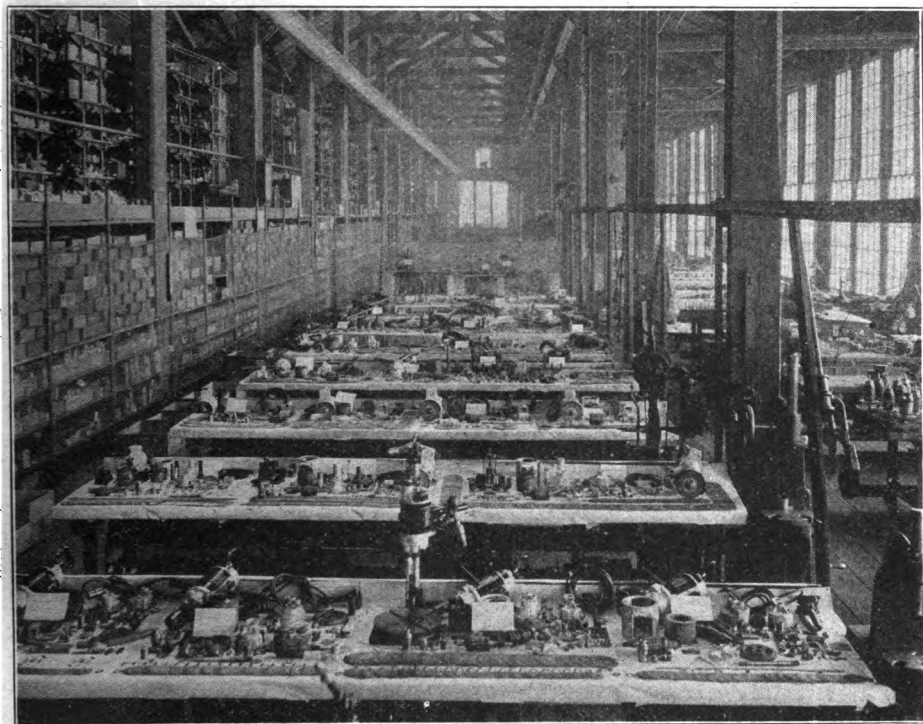


Exhibit of Duntley Electric Drills and Grinders at the Burke Electric Plant, Erie, Pa., prepared for the benefit of visiting salesmen of The Chicago Pneumatic Tool Co. One drill and grinder of each size and type was on display surrounded by all of its component parts, giving the salesmen an insight into the electric tool construction which they could get in no other way.

### Capacity of the Horse.

Some interesting data relative to the working capacity of the horse is given in a comparison between the horse and the gas traction engine made in a paper read by Mr. L. W. Ellis at a recent annual meeting of the Gas and Gasoline Engine Association, and reprinted in the *Engineering News*. Mr. Ellis says:

Endurance is the horse's weakest point. Ten hours a day is often assumed as his working period. Authorities claim that eight hours is better, or that six under a heavier load will accomplish the same volume of work with less tear and wear on the horse. The average farm horse cannot be depended upon for more than 13 to 15 miles of pull a day, nor more than four to six hours of work per day, as an average of even the busiest months.

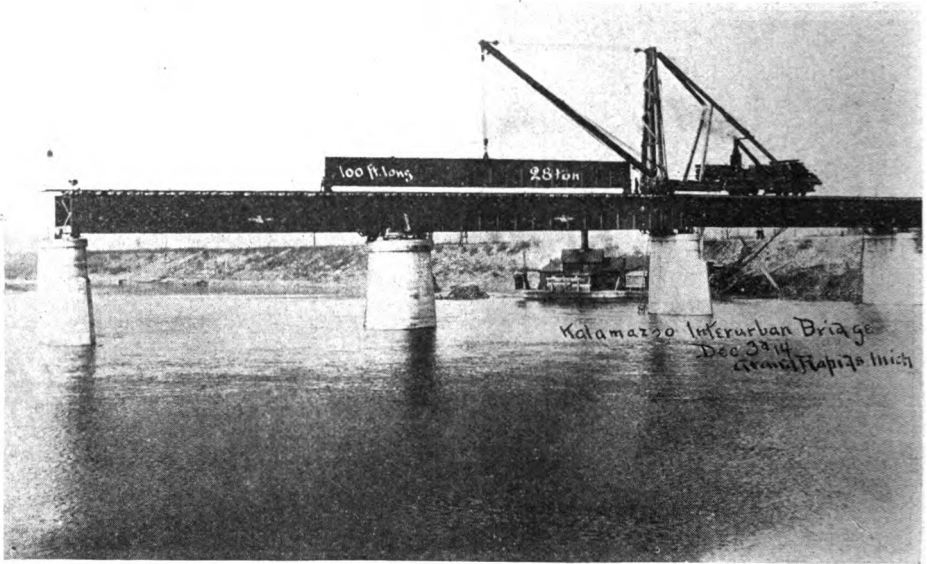
Properly handled, working about six hours a day, well and carefully fed, a

horse may have a working life of ten years of 1,000 hours each. The average farm horse will do well to develop 500 horsepower hours per year or 5,000 in ten years.

About 20 per cent of the horse's weight may be taken as the maximum sustained draft, and six to eight miles per hour his maximum sustained speed for anything more than an hour or so per day. The draft horse ordinarily gives the largest volume of work per day at about one-half his maximum load and one-third his maximum speed.

One reason for the great flexibility of the horse is the fact that he works most economically at about one pound of draft for ten pounds of weight, or from 50 to 20 per cent of the rate he can exert in a pinch.

Anyway, we admire a cheerful idiot more than we do the other kind.



Carrying Girder Out Into Place.

The Kelly-Atkinson Construction Co., 1304 Security Building, Chicago, have just completed the deck plate girder bridge over the Grand River for the Michigan Railway Engineering Co. for the use of the Kalamazoo Interurban. The bridge is 854 feet long, 12 feet wide and consists of deck plate girders of 85 and 100 foot spans each, with one span 197 foot long for the draw. The girders support a steel floor, 12 foot wide, on which the ties are placed. Work was begun Nov. 20th and the job completed on Dec. 19th. About 20,000 rivets were driven, Chicago Pneumatic Tools being used exclusively. Parker Snaps were used and only one was broken on the entire job. The derrick car used to carry out these girders was constructed from material from several different rigs. The mast is 46 feet high from top of rail and the boom is 75 feet long. An ordinary flat car was used with an extension built

on the back for counterweight. The estimated capacity of the derrick car used is 40 tons.

Photograph No. 1 shows a girder being carried into place and No. 2 shows the girder ready to be lowered.

The work was done under the supervision of Geo. E. Burtscher.

#### Located at Last.

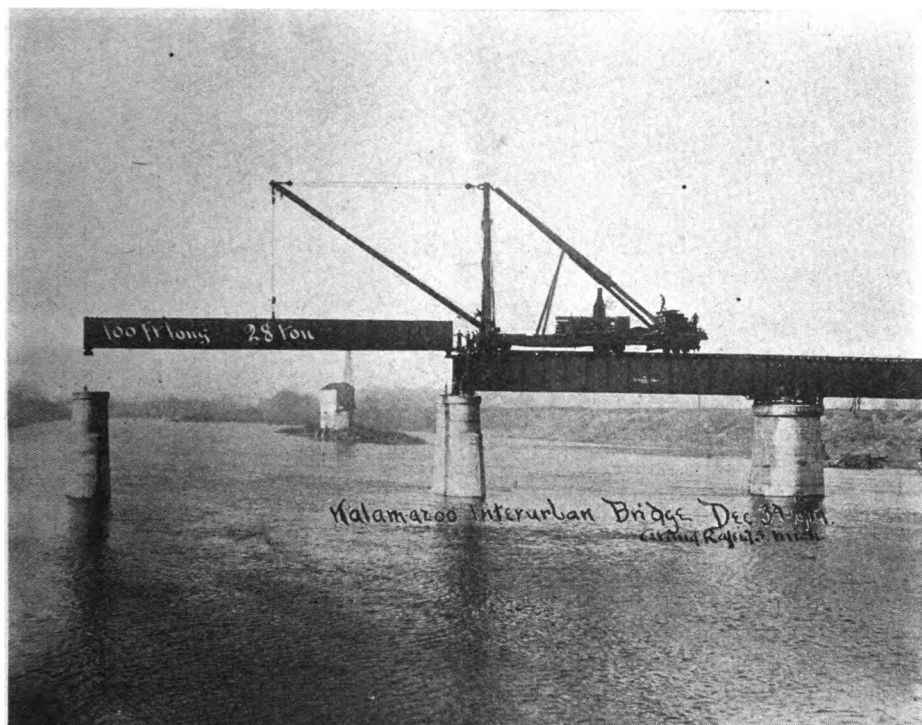
A traveling salesman returned in a very despondent mood after being on the road a month. His boss, noticing his dejection, said:

"Levi, vy do you look so bad?"

Levi replied, "I vish I could die and go to hell."

Boss—"Vy you make such an awful vish, Levi."

Levi—"Because every vere I go every merchant say, 'Business has gone to hell.'"



Girder Ready to Be Lowered.

### As a Slight Token.

A widower belonging to a country village lately led to the altar a fourth bride. After the honeymoon the happy couple settled down in his home, and, as the surrounding country was new to the lady, she was anxious to visit all the places of interest in the locality.

Among the spots visited was the village churchyard, and there the husband and wife paused before a very elaborate tombstone, the property of the bridegroom. The bride, being a little short-sighted, asked him to read the inscription. In solemn tones he read:

'Sacred to the memory of Sarah —, beloved wife of John —; also Jane —, beloved wife of John —; also Mary —, beloved wife of John —.'

He stopped abruptly.

"What are the words beneath?" innocently asked the lady, and her horror can be imagined when he read:

"Be ye also ready."

### Energy or Radium.

If one could utilize the energy of a ton of radium through a space of thirty years it would be sufficient to drive a ship of 15,000 tons, with engines of 15,000 horsepower, at a rate of fifteen knots throughout the whole thirty years. To do this 1,500,000 tons of coal are actually required, says the Chicago Tribune.

These are not fanciful figures, for the energy is there, though, as a matter of fact, it is unlikely that man will ever produce much more than half an ounce of radium a year.

Still, the fact is important for this reason—that science is convinced that the radium in radium bromide is not the only element which possesses this marvelous store of energy, but that the calcium in gypsum and the sodium in common salt contain also this energy content.

One little taste of defeat is difficult to swallow.



Little Giant Truck Delivering Standard Oil in Polo, Ill.

#### Place Order for Ninth Little Giant.

The American Union Fish Company of Los Angeles, Cal., have recently placed order for their ninth Little Giant Truck. It was in 1911 that these people were persuaded to give up a part of their horse and wagon outfit, and invest in a Model "D" Little Giant. No concern using auto trucks has taken greater advantage of the advertising possibilities of motor driven vehicles than the American Union Fish Co. A panel top body, beautifully finished with a fine specimen of the finny tribe painted on each side, over which appeared the slogan, "If It Swims We Have It," not only delivered the goods to the sea food eaters of Los Angeles, and then performed the final act of the sale, but it actually created business by attracting attention, arousing interest and creating desire, three prime objects of advertising.

Their vice president, Mr. Coalures, in commenting on the service performed by

their fleet of Little Giants, says "In 1911 we were using nothing but horse-driven vehicles for delivering fish; during this year we purchased a Model "B" 1500 lb. capacity truck, and found that we could cover double the territory at the expense of one team and wagon. This truck proved to be an excellent advertisement for our business and in 1912 we purchased two Model "C" trucks to take care of the increased trade, and thereafter, as fast as we could dispose of the horses we have replaced them all with trucks.

My experience has taught me that not only are trucks economical, but they increase the business by being able to give prompt delivery and attention to the customers. I am positive that the "Little Giant" trucks have always been the best trucks in its class, and proof of my belief is evidenced by the fact that I hereby place my order for the ninth "Little Giant" truck. I will be glad to recommend your car to any prospective buyer."



Little Giant, five years old, still doing business for J. H. Eitapence, Rutland, Vt.

### Five Years Old and Still on the Job.

This is a photograph of a Little Giant motor truck owned by J. S. Eitapence, Rutland, Vt., loaded with a complete plumbing job weighing 1,800 lbs., ready to start up into a little mountain town about twenty miles from Rutland and over a rough and hilly road, the road in several places being 20 per cent grades.

This car was purchased by Mr. Eitapence on June 3d, 1910, and he has operated it continually, summer and winter, ever since. The only time it is laid up is about a week early each spring when it is cleaned up and painted. Last spring was the first time the engine of the truck was ever taken apart. The only parts of the engine that showed any signs of wear were the piston rings. These were worn so little that they were replaced in the engine and will give satisfactory service for another year. This is a very remarkable record for a motor truck engine.

Mr. Eitapence is able to maintain his Little Giant for two-thirds of what it formerly cost him to maintain a one-horse team and it requires considerably less work to take care of. This truck goes everywhere within a radius of fifty miles of Rutland and has never yet had a tow rope on it.

Mr. Eitapence recommends the Little Giant to anyone contemplating the purchase of a motor truck. He states that it has increased his business fully 20 per cent and is much more efficient in every way than team delivery.

---

"What's daughter doing?"

"Making shrimp salad."

"I didn't know we had any shrimp in the house."

"We haven't, but one is going to call on her this evening."

---

No great success was ever attained by kicking.



Standard open flare board body 44x114" with special pipe racks and buggy top.

A Little Giant Truck in the roofing and sheet metal business, Baltimore, Md., sold by the Little Giant Sales Co., Charles and Twentieth streets, E. H. Habersham, General Manager.

### The Effect of Motor Trucks on the "Help."

By. C. I. H.

Most diseases are contagious, but so are the good things of life. Like begets like. The world likes to follow a leader. The inspiring music of fife and drum breaking into a quickstep will waken a whole army of weary soldiers and spur them on into "double quick." When the pace-maker gets busy he holds the world by the nose. After holding the reins on the average delivery horse, the driver tunes his nerves, muscles and his mental attitude toward things in general to the speed of the "charger" before him. The horse is in no rush, why should the driver be. Why should the process of loading and unloading his wagon be hastened to a speed out of keeping with the slow, comfortable jog of his horse. Place that man in charge of a motor truck. Place in his hands a book such as the "Little Giant Chauffeur," issued by the Chicago Pneumatic Tool Company. Let him study the book and study his machine. You will be surprised at the transformation that will come over your driver. If he has any gumption at all he will speed up. To spin along behind one-horse power is different from

jogging along behind one-horse power. He not only learns to act faster and do things faster, but he will actually learn to think faster. It may have become a custom with you to say on his departure over his route, "Now, Jim, hurry up. You know you have to make another trip before six." Henceforth your parting word will be, "Jim, don't go too fast. Hold her down. Don't exceed the speed limit." And Jim, having been awakened from his lethargy—changing his pace-maker from horse to motor truck, will ginger up into a live factor in your business. And that is not all. When Jim ceases to be chambermaid to old Dobbin, and is relieved of his duties as chief hairdresser and chiropodist in your stable, he will awaken still more. Association with a motor truck will develop him and he will become an asset instead of a liability.

### His Money's Worth.

Scotch Father: "And you must ha' seen a lot of sights in London, eh?"

Scotch Son: "Not so muckle. They charged me six shillings a day for my room at the hotel, and you dinna suppose I was going to pay that without staying in the room and getting my money's worth?"





Standard four post canvas top.

Another Little Giant Truck doing business in Baltimore, also sold by the Little Giant Sales Co. of that city.

### Why the Service Garage Manager Uses Swear Words.

Another case, B recently employed a new driver for about \$6 per week. The second day we had to tow him in. He had no water in the radiator and no oil. The cylinder had been evidently red hot. The piston, piston pin and connecting rod had turned white from heat and the piston pin was frozen to the connecting rod and when the motor got cold the working parts could not be moved—they were frozen from the heat and, of course, the bearings burnt out. They blame it on the truck and told things to the service garage manager. The B Co. phoned the other day that their car was no good and would not pull up hills. We, of course, went out to see what was the trouble and found nothing more than that the low speed needed adjusting. Showed their driver the low speed adjustment screw on the transmission and asked if he knew what that was. He said he did not. Here is a man that had been driving a truck about a year, but did not know about the adjustment screw, and many other drivers that are driving auto trucks have never taken the

cover off their transmissions nor made a speed adjustment.

### Sh! Don't Wake Him Up.

I wish I was a rock a-sittin' on a hill.  
A-doin' nothin' all day long  
But just a-sittin' still.  
I wouldn't eat,  
I wouldn't sleep,  
I wouldn't even wash,  
I'd just sit there a thousand years  
And rest myself, By-Gosh!

### On the Jump.

One of Lord Charles Beresford's tenants who conducted a small undertaker's establishment in Waterford, was one day asked how the business was getting along.

"Grand, me lord!" he exclaimed. "I now have the luckiest little hearse you ever saw. Glory be to goodness, it was never a day idle since I got it."

An Iowa woman who looked into the barn and saw her husband hanging to a crossbeam is reported to have exclaimed:

"Land sakes! So that's where my clothesline went to!"



# Don't Pump Your Life Away

on a Hand Car or a Velocipede When You Can Ride in an Automobile.

**The No. 2 Rockford Car is a light, speedy, serviceable runabout for the rails.**

**SIMPLE in  
construction**

**EASY to  
operate**

**EASY to  
pay for**



**No. 2 Rockford Car**

**Send for  
Catalogue  
No. 43**

**Chicago Pneumatic Tool Co.**

**Chicago: 1014 Fisher Building**

**New York: 50 Church St.**

*Branches Everywhere.*

At the convention of the Roadmasters and Maintenance of Way Association, held in Chicago, Sept. 9-12 last the following report on section motor cars was rendered by a committee which had been appointed to investigate.

1. The use of section motor cars is considered by your committee an important development toward increase in efficiency.

2. There have been diverging views existing among some railroad men concerning the advisability of installing motor cars on sections and, while their use may not be equally advantageous in all territories, it is evident to your committee, after careful investigation and actual experience in the use of these power driven cars, that there is absolutely no doubt of the economy and advantages in their use.

3. These cars, where used, have resulted in a substantial saving in track maintenance not only from the fact that a greater territory may be covered by the same number of men formerly em-

ployed on the hand car sections, but because experience shows that greater efficiency and longer hours of work are secured; the men reach their work in a condition ready for duty; the service of work trains has been dispensed with to a great extent, in the distribution of material and taking gangs to and from distant points, and men are collected quickly in emergency cases.

The power on these cars could also be made use of for such purposes as operating rail saws, drilling machines, putting in screws, spikes, etc.

After becoming familiar with the motor car, the foremen are quick to recognize its merits and with the men give it their best support. Men are more readily secured on sections where these cars are operated.

Light repairs to these cars can be readily made by the foreman, and it very rarely becomes necessary to shop the cars for repairs to the motor or parts. Their use may be abused, however, and excessive rate of speed and disregard of

trains would sooner or later result in accidents and heavy repair cost. This difficulty is to be avoided by issuing and enforcing stringent rules as to the use and care of the cars.

4. Your committee urges the adoption of motor section cars and recommends their general use especially on portions of the road where the volume of traffic is not exceptionally heavy.

Those interested in the proposition should get Catalogue No. 43, issued by the Chicago Pneumatic Tool Co. It tells all about the Rockford Railway Motor Car.

### Wasted Words.

"Hello, old man, I'm mighty glad to see you. Gee, you're looking fine. How is your wife and how are the babies? It's good for sore eyes to have a look at you. Say, you must have found the fountain of youth. You look younger every time I meet you. I heard a friend of mine say a mighty nice thing about you the other day. I intended to remember it, but I've forgotten just now what it was. I'll remember it in a minute. How do you keep yourself in such fine trim, anyhow? I wish I knew how to——"

"It's no use. There's not a thing in your line that I want to buy. I'm all stocked up."

### And They Went in and Had Something.

A pneumatic tool salesman was one day accosted on the street by a man who knew his face but could not quite place him.

"Now, where in hell have I seen you?" he asked perplexedly.

"From where in hell do you come, sir?"

### He Learned Something.

New Pneumatic Tool Salesman—Wonder why they are shipping so many drills to Europe?

Old Pneumatic Tool Salesman—Why, to drill the soldiers, you old chump.

But the best way to balance an account is to square it.

### Alphabet of Proverbs.

A grain of prudence is worth a pound of craft.

Boosters are cousins to liars.

Confession of a fault makes half amends.

Denying a fault doubles it.

Envy shooteth at others and woundeth herself.

Foolish fears double danger.

God reaches us good things by our own hands.

He has hard work who has nothing to do.

It costs more to avenge wrongs than to bear them.

Judgment should be exercised in all things.

Knaving is the worst trade.

Learning makes a man a fit companion for himself.

Modesty is a guard to virtue.

Not to hear conscience is the way to silence it.

One hour today is worth two tomorrow.

Proud looks make foul work in fair faces.

Quiet conscience gives quiet sleep.

Richest is he who wants least.

Some faults indulged are like little thieves.

The boughs that bear most hang lowest.

Upright walking is sure walking.

Virtue and happiness are near akin.

Worth creates more opportunities than can be filled.

'Xperience is a wise counsel, but the price one often has to pay cuts deeply.

You never lose by a good turn.

Zeal without knowledge is like fire without life.

### His Daughter's Voice.

Patrick sat in the kitchen watching his wife peel potatoes. Mary Ann, their daughter, was in the front room playing the piano and singing at the top of her voice.

"Patrick," said his wife, "phwat does the singing tacher mane when he says, 'Mary Ann's voice is mellow?'"

"Oh," said Patrick, "that's jest a nice name for rotten. These music fellers they do be so polite."



However, there are many fair singers who are not blonds.

Ready money is seldom ready when you want to borrow some.

The young widow begins to talk about her late husband rather early.

Money you bet on the mare doesn't always push her under the wire first.

Nothing is gained by abusing those whose opinions differ from your own.

A man may boast of his ancestors because he has nothing to look forward to.

It is far easier to acquire a reputation for greatness than it is to make good.

Many a woman who doesn't know her own mind gives her husband pieces of it.

Who ever saw a free show that didn't have some kind of a string attached to it?

If a man didn't make an occasional mistake his friends would have no kicks coming.

When a woman is able to make some other woman jealous she realizes that she has not lived in vain.

Before congratulating yourself when you come out on top, bear in mind that the froth on a glass of beer does the same.

The worst thing we can take for a cold is advice.

A man has no real kick coming when his wife talks to herself.

Many an expert swimmer has been drowned in the sea of matrimony.

Some girls become squint eyed from perusing the magazine beauty hints.

It's impossible to suppress the man who thinks he can tell a funny story.

When an old-fashioned farmer travels he carries most of his baggage in his pockets.

It takes a man to offer an explanation to his wife that doesn't explain anything.

The road to success is open to all, but too many want to get there without the trouble of going.

Every man who thinks he does all the work he is capable of doing would probably do more if offered a bonus.

It doesn't take a woman long to get wise to a man's actions after marrying him—then she proceeds to call his bluff.

Some men find it so difficult to save a little money when single that they don't even think it worth while to try after marrying.

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# IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances  
By THE IDEAL POWER PUBLISHING COMPANY  
Fisher Building Chicago

Vol. 11.

May, 1915.

No. 5.

## Up to the Minute Design

By W. H. CALLAN

Manager, Compressor and Engine Plant, Chicago Pneumatic Tool Co.

"Improvement coming from independent thought, with reason, is what is needed in engine design. Following tradition is an impediment to progress. Just because George Corliss designed a part a certain way forty years ago it does not necessarily follow that it should be made just that way forever after."

The new line of Inclosed Self-Oiling Compressors and "Giant" Fuel Oil Engines, which has recently been brought out by the Chicago Pneumatic Tool Company, has a great deal of individuality in its design.

One of the principal features is the crosshead used in these compressors and engines. As the photograph shows, it is of the box type; that is, without adjustable shoes, and is turned to perfectly fit the bore of the crosshead guide. This construction is much better than one with loose shoes for the following reasons:

(1) It is properly fitted before leaving the factory, therefore will never heat or pound.

(2) It cannot be tampered with by a fussy engineer.

(3) It is about twice the length of the ordinary adjustable shoe crosshead; hence it overtravels the guide nearly half its length at each end of the stroke, on account of which the wear on the

crosshead and guide is always in a straight line; therefore as Professor Sweet says, "Things that do not wear out of true do not wear much."

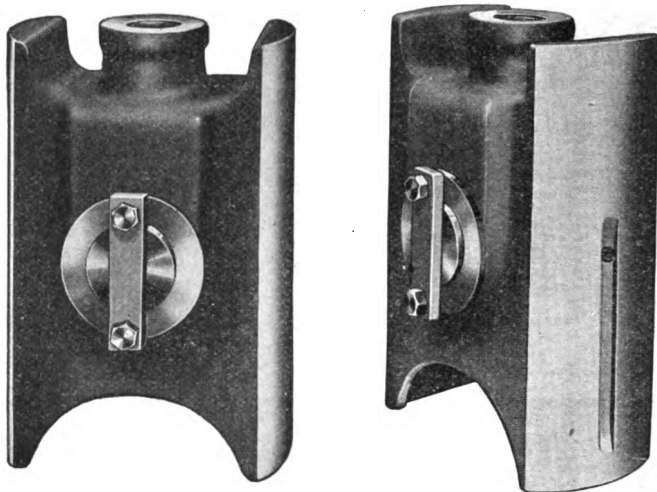
(4) The bearing pressure per square inch is less than half that which it is on the ordinary short adjustable shoe crosshead, consequently mechanical losses and wear are much less.

(5) It is better to have the shoe cast integral, because it can never become loose when running, and wedge in guide, causing damage; it is also more rigid and firm, and, on account of this, furnishes a complete and uniform bearing over its entire length, resulting in little or no wear.

(6) It is better solid for the reason that the center of the crosshead always remains in the center of the guide, as it cannot be adjusted out of center like the ordinary loose shoe type.

(7) The solid feature is of great advantage on account of there being no joints, adjustable shoes, or parts fit together to become distorted from being improperly fit, incorrectly adjusted, or sprung out of shape through incompetent handling.

(8) The cost of upkeep will be nothing, as there is nothing to get out of order.



Two Views of the New Type of Crosshead.

The life of this crosshead will be greater than that of any other part on the machine, as from actual service, it has been found that after five years' running the tool marks are still present on the wearing surface, and if properly lubricated and the bath of oil in which it runs is kept clean, the manufacturers stand ready to guarantee this type of crosshead for any length of time the purchaser wishes.

#### **New Bulletin on Class "O" Steam and Power Driver Compressors.**

Bulletin 34-M has just been issued by the Chicago Pneumatic Tool Co. in which their Class "O" Compressors are fully described and illustrated. The Simplate valves, two and four-step capacity regulation, and other special and interesting features, are treated at length. The Bulletin will be sent on request.

Two soldiers were speaking about the Battle of Bull Run. One of them was a Yankee, and the other an Irishman.

"Pat," said the Yankee, "were you at the battle of Bull Run?"

"I was," said Pat.

"Did you run, too?"

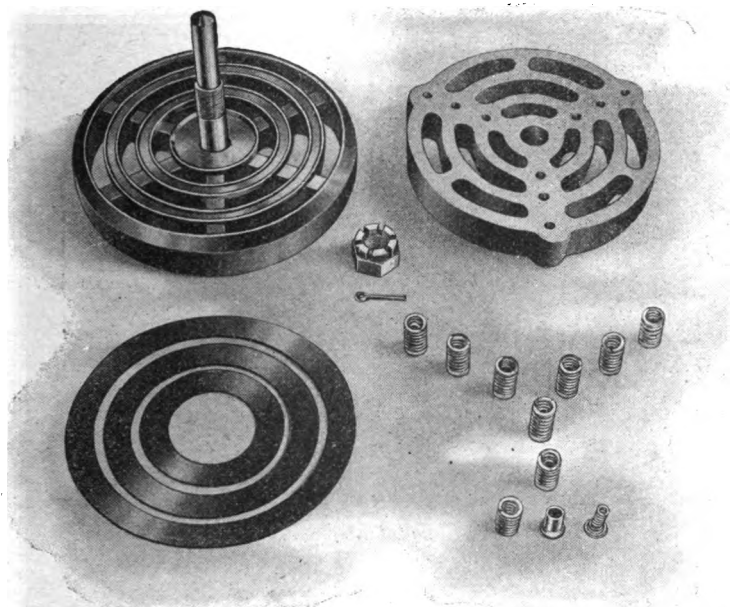
"I did," said Pat, "and the felly that didn't run is there yet."

#### **Simple Valves for Air Compressors.** (By W. P. Pressinger, Mgr. Compressor & Engine Dept. Chicago Pneumatic Tool Co.)

The Simplate valve is used in all of the latest types of compressors manufactured by the Chicago Pneumatic Tool Company, designated as Class O, N, N-SO and N-SG machines.

As the illustrations show, the valve is extreme in its simplicity, and is provided with independent plates and springs, affording varied openings according to speed. At low speed but one plate moves, while at high speed all plates move; hence ideal operation under all speed conditions.

A comparison of this valve with other forms of plate valves used in other makes of compressors will readily show how extremely complicated these other forms of valves are in their construction, inasmuch as they afford no independent opening of the different ports, nor flexible spring action; being, instead complicated and delicate pieces of mechanism that move as a whole at each stroke, regardless of the operating speed, and are consequently noisy at low speeds, producing vibrations so severe as in some cases to shake the building in which the compressor containing them is located.



Component Parts of a No. 6 Inlet Valve. (Simplate.)

The Simplate Valve has plates of uniform section, each plate being independent of the other. The spring tension is such that but one ounce pressure per square inch is required to open the outer plate, and  $2\frac{1}{2}$  ounces to open the inner one; hence at low speed the outer plate is the only one that will open, resulting in a varied area with absolutely silent service at all speeds.

Other plate valves not only lack the independent action over each port, but being rigidly bound in the center, must, in order to operate, bend forward and back with each opening and closing, and must surely in a short time give way and break. Not only is this plate design difficult to apply and maintain, but it is grossly inefficient, noisy at low speed, and cannot be operated without an excessive vacuum in the cylinder. The unequal expansion and contraction, due to the un-uniform section of the plate, will inevitably permit leakage of air, and the constant bending back and forth will soon cause a permanent set, and the plate will no longer lay tightly on its outer seat. Furthermore, the

spring tension is the same with both inlet and discharge valves. Should any mishap occur (such as the breakage of a piece from the outer ring), the whole expensive and complicated plate must be provided in replacement.

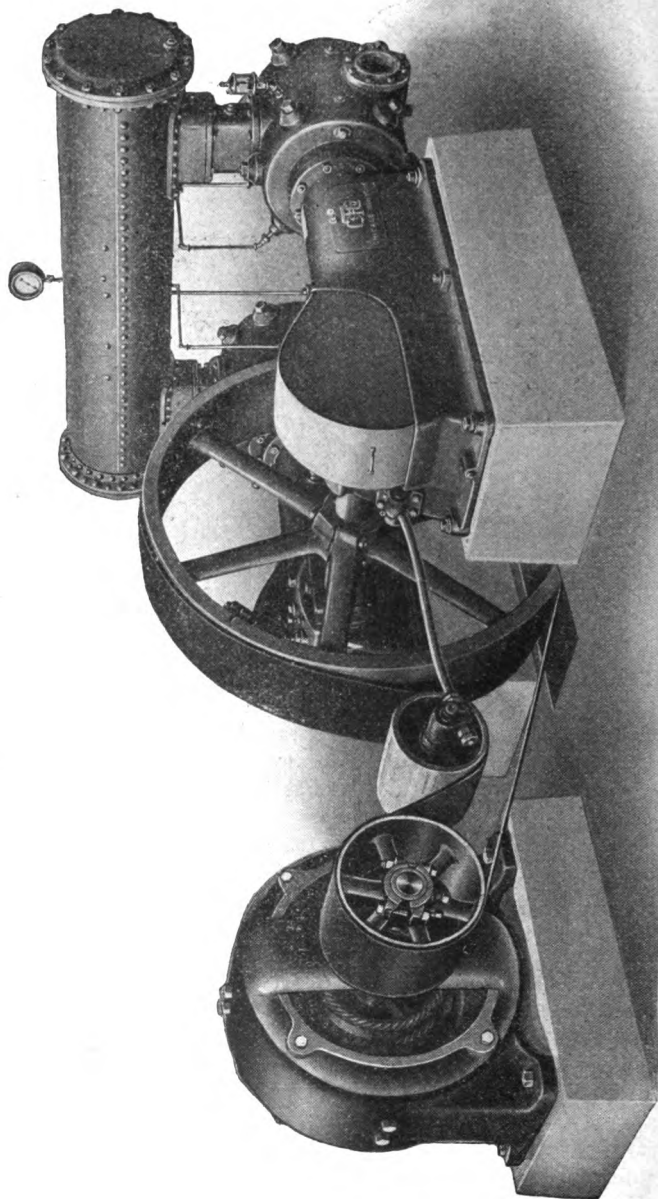
With the Simplate Valve it is only necessary to replace the particular part that is broken; and in emergency, if no spare plates are at hand, a temporary repair may be effectually provided from a piece of sheet-iron, or other thin material, which will serve until the new parts are obtained. This is not possible with other forms of plate valves, as they can only be produced under skillful, expert supervision.

The plates in the Simplate valves are all interchangeable, which means that a plate can be transferred from a discharge valve to an inlet valve, or vice versa, as may be desired.

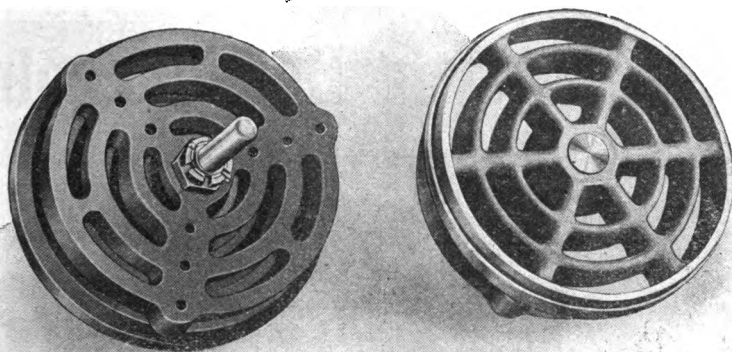
The Chicago Pneumatic Tool Company manufactures these valves, and they carry its guarantee against breakage.

Next in importance to the design of the plate valve itself is the application





Class O-CBE Two Stage Short Belt Driven Compressor with Floating Idler.



No. 6 Inlet Valve Assembled.

of the valves to the air cylinders. The Simplate Valves are placed radially in the cylinder, the inlet valves on one side, and the discharge valves on the other, the passage to each set being separated by water-jacketed walls. This arrangement reduces clearance space to a minimum, keeps the air inlet cool, assures high volumetric efficiency, and enables the quick location and easy remedy of any trouble that may arise. As an example, should an inlet valve become leaky, it may be located by feeling the covers over the inlet valves. If a valve leaks but slightly, the cover will be warm; and it is therefore a simple matter to discover and remedy the valve needing attention.

With other forms of valves the situation is quite different, as the valves are placed horizontally over the top of the cylinder and held in place by a tie-rod passing through their centers. With this complicated construction, should a leak develop it would be practically impossible to determine which valve leaks. It could not be located by placing the hand over the inlet passage, as this passage is surrounded by walls heated by the discharging air (obviously inefficient). If it is guessed that the first one in the row is the leaky valve, in order to make sure the cover must be taken off and the discharge valve removed; after which it becomes

necessary to take off the nut holding the inlet valve in position and slip the valve from the rod which holds them all in place.

After proceeding this far, should it be discovered that this particular valve is in good working-order, further search must be made to locate the trouble, which may be with some of the other valves at the end of the cylinder first approach, or perhaps at the other end of the cylinder. It then becomes necessary to put back the inlet valve that has been removed; but in doing so, should it fit tightly on the rod, or should the rod be jarred in any way when putting it back in place, the valves at the opposite end of the cylinder will be knocked from their seats, necessitating the removal of the cover on the opposite end; after which the valves must be lifted up and properly placed on their seats, and the search continued until the valve needing attention is finally found.

Sample Simplate Valve plates will be furnished to all interested at the Chicago Pneumatic Tool Company, Chicago, New York, or at any of its offices.

### Those Obvious Signs.

A countryman on a visit to a city happened to see a sign, "Cast Iron Sinks." He looked at it a moment and then said: "Any fool knows that."

# Safety First in Housekeeping



demands that germs and dust and dirt be kept out of your carpets, rugs and draperies by the use of a

## Duntley Electric Cleaner

The most powerful and satisfactory portable vacuum cleaner made.

Made in sizes suitable for use in offices, hotels, theaters, churches, large or small homes, cottages or apartments, and for commercial cleaning.

If you believe in vacuum cleaning you will insist on a Duntley.

### AGENTS WANTED

Some Good Territories Still Open

## Duntley Products Sales Company

732 Michigan Ave., CHICAGO

I am in the market for a Duntley Electric Cleaner. Please quote me prices and send descriptive literature.

Name .....

Address .....

I am interested in agency proposition for following territory .....



Little Giant Corner Drill Using 13/16" High Speed Reamer on Harlem River Bridge, 129th St. and 2nd Ave., New York City.—Terry & Tench Co., Contractors.

### The Earth Compeller.

Some poet stopped long enough to notice how Chicago Rock Drills do their work and this is what he said about them in a recent number of Collier's:

There's the man on the steam drill. His dentistry of the earth's crust is to be observed whenever an excavation for building foundations is torn out of the solid rock. Without this preliminary labor neither dynamite nor derricks avail. His weighted tripod is set up. The long drill rod is fixed in place. The steam is coupled on. Then begins the ceaseless pfutt—pfutt—pfutt—in explosive snorting. A helper, with a tin can attached to a stick, pours drink after drink into the drill hole. Unconcerned the man perches on the drill. He balances himself erect on the bucking tripod or sits gracefully on a projecting seat like the outrigger of a sailing canoe. The pulsation and din of his machine do not move him. The spurting plume of steam sometimes half conceals him; he sits reposeful but alert. Derricks carry

their loads over his head. Huge boulders and barrows full of splintered rock swing by, lurching and oscillating just above him. He does not heed them, rarely even looks up. The thunder of a blast not far away hardly makes him turn his head. The thrill and panoply of the battlefield are not for him. He makes no gallery play for the benefit of the onlookers who all day long line the brink of the yawning excavation. His attention is given to the quivering machine beneath him. Without him and his brothers the Panama Canal could never have come. Here is a hero of peace—steadfast, unassuming, and masterful.

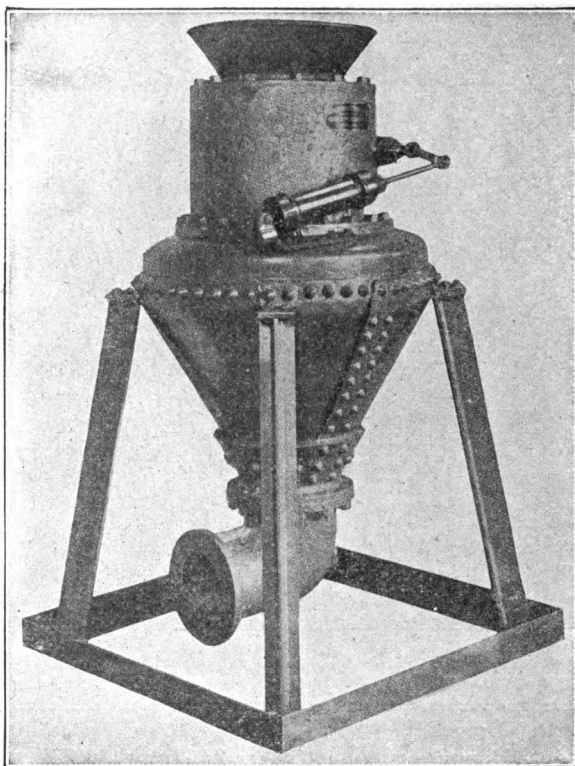
### Sandy's Idea of a Treat.

A man dropped into a cafe one afternoon and saw his friend Sandy standing at the bar indulging in "a lone one."

He walked up to the bar and greeted Sandy.

"Will you have another one with me?"

"No, thank you," said Sandy, "but you can pay for this one if you will."



The Pneumatic Concrete Mixer and Conveyor.

### HOW TO MIX AND PLACE CON- CRETE BY COMPRESSED AIR.

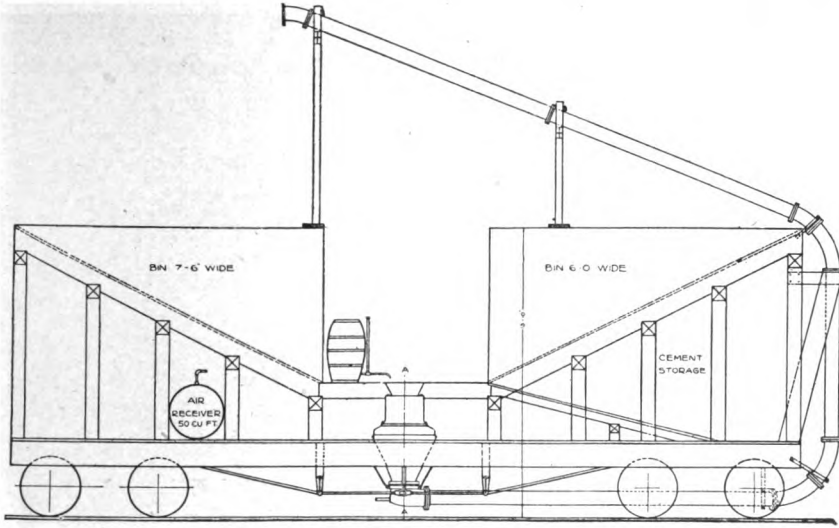
You know that the cost of handling material through a pipe—as in hydraulic pipe line dredging for example—is but a small fraction of the cost of handling material in any other way. The cost of transporting and handling concrete between the mixer and the forms by the old method is the biggest part of the cost of mixing and placing concrete. You can save this cost by using the Mac-Michael Pneumatic Mixer and Conveyor, a machine made by the Concrete Mixing and Placing Company, which takes an unmixed batch of concrete and, in one operation, mixes and delivers the concrete through a pipe to place in the forms.

An 8-in. pipe from the mixer to the forms takes the place of all the men used to haul, hoist and transport con-

crete, and eliminates the necessity of such plant as towers, runways, dinky engines, track, trestle, cars and other plant ordinarily required for this work.

The concrete is mixed with the same air which is used to convey it through the pipe to the forms. Within ten seconds after water has been added to the cement, the concrete is in the forms at rest. It is all done in one operation. The pipe is carried under tracks and around obstructions, so as to be out of the way of other work, and the concrete is placed and packed tightly in many difficult positions where the handling of concrete by hand would ordinarily be at a prohibitive cost.

Work in which this machine has already been used with great success is bridge construction, tunnel lining, retaining wall construction, heavy foundations and piers.



Car Equipped With Mixer for Tunnel Lining for C., B. & Q. R. R.

**Data and Information.**

The amount of air required for operating the machine depends upon the length of the delivery pipe. The amount will vary with the number of turns in the pipe line, with the kind of material used for aggregate, and also with the vertical distance involved in the delivery. For general purposes, however, the amount of air will not exceed one cubic foot of free air, compressed to 80 lbs., for each lineal foot of delivery pipe, for each batch of concrete.

The machines are made in  $\frac{1}{4}$  and  $\frac{1}{2}$ -yd. sizes and the amount of concrete which may be mixed and delivered to the forms in a given time depends upon the facilities for loading the mixer. Over-head bins for supplying the machine with materials by gravity will enable the mixer to be loaded twice each minute.

The delivery pipe used for this work should be made of No. 10 gauge metal or heavier. A heavy steel pipe may be economical where large quantities of concrete are to be placed without many changes in the moving of the pipe line. An 8-in. well casing is also an excellent pipe for this purpose.

**Cost of Operation.**

The labor cost of mixing and placing concrete by compressed air as taken

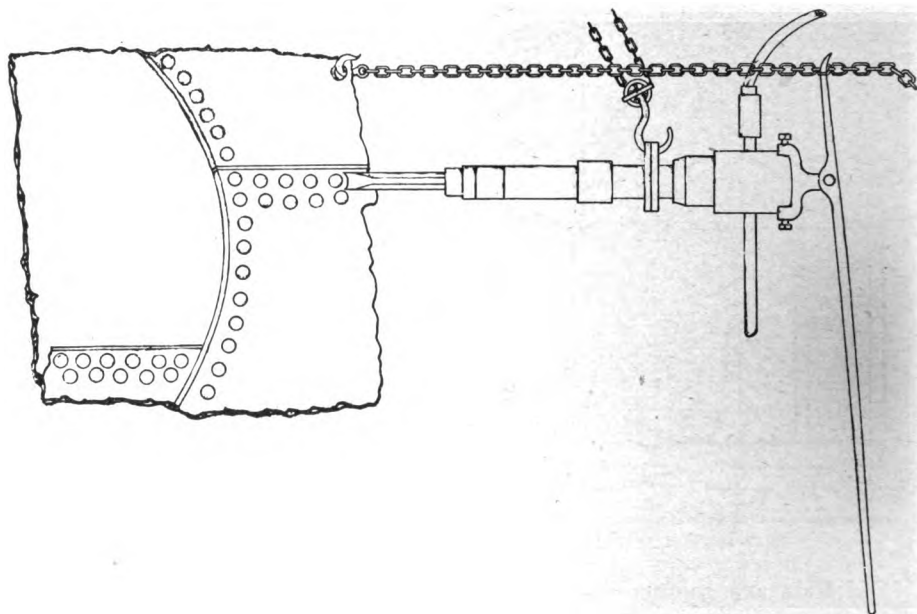
from actual records of both tunnel and open work, has varied from 15 cents to 55 cents per cubic yard. The ordinary gang consists of 8 men, as compared with 22 to 30 men required for any other method of doing similar work. The ordinary capacity of the  $\frac{1}{4}$ -yd. machine is about 150 cu. yds. in ten hours and of the larger machine is about 250 cu. yds. in ten hours.

An example of the actual cost of ordinary work is given below. This concrete was placed in three separate and distinct walls. One was 20 feet below the elevation of the mixer and about 100 ft. to the west. The other two walls were at an elevation of 30 ft. above the mixer and 80 ft. to the east. This work is outside work; it is taken at random and it exhibits an average cost. The work was done at Niagara Falls, Ont., by the Ontario Power Company, on Sept. 10, 1913:

On Material Floor.	Rate Hour.
One foreman .....	\$0.35
Two laborers, hopper .....	.22½
Six laborers, chutes.....	.22½
Two laborers, cement.....	.22½

**Machine.**

One operator .....	.25
One watchman .....	.25
One dumper .....	.25



The No. 2 Boyer Rivet Buster in order to do its work efficiently must be held up to the work at the proper angle. The device here shown is one used by the German-American Car Co. with great success at their East Chicago Plant.

#### Handling Concrete.

One foreman .....	.45
Four spreaders .....	.25

Total per hour.....\$4.80

Machine operated 11 hrs., 15 min.

Changing pipe, 8 hrs., 45 min.

Total time, 20 hrs. or two 10-hr. shifts.

During time of pipe change the gang on the material floor (one foreman and eight laborers) were used on excavation, as follows:

One foreman at 35c—8¾ hrs.....\$ 2.90

Eight laborers at 22½c—8¾ hrs.. 15.75

Total .....\$18.65

Total labor cost for 20 hrs. at \$4.80 \$96.00

Total for excavation..... 18.65

Total chargeable to concrete work.\$77.35

Number of cu. yds. placed.....257 yds.

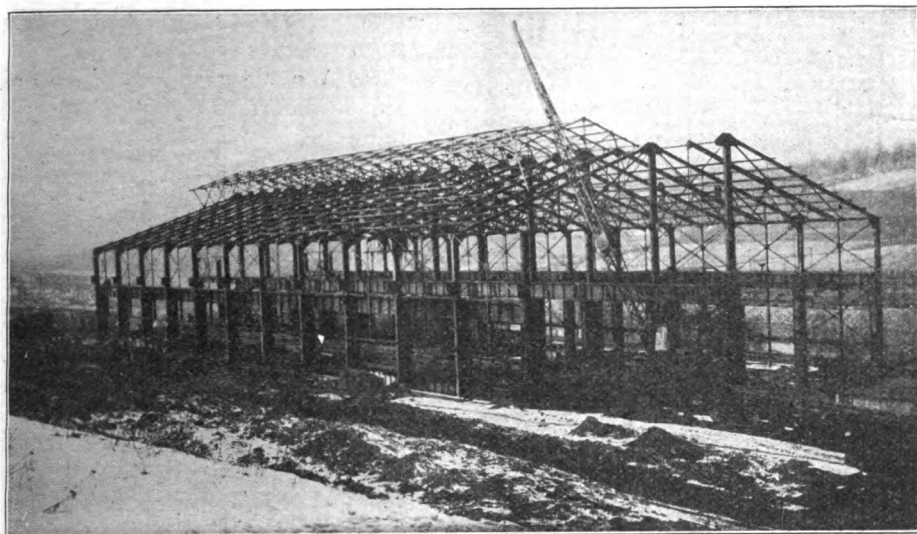
\$77.35, 257 yds., cost per cu. yd.....\$0.30

Because of the revolution of concreting methods brought about by the use of this machine, it is necessary to instruct and advise the user in its operation until he can satisfactorily operate it himself. The manufacturers therefore do not sell

the machines, but lease them. They will be pleased, at all times, to give information as to plant layouts to suit conditions and requirements for any work contemplated.

The water works tunnel, St. Louis, Fruin-Colman Construction Co., contractors, has just been completed. Of the contracts now under progress, the following may be mentioned: C., B. & Q. R. R. tunnel at Arminto, Wyo., Mr. Calvert, chief engineer; No. Pac. R. R., three miles of retaining wall for track elevation, Spokane, Wash.; city of Memphis, Tenn., two 16-ft. diameter sewer tunnels. The new intake tunnel at Wilson avenue, Chicago, is one of the contracts they have just closed.

Wherever this machine has been installed its users have themselves been most enthusiastic over its performance. The mixture is perfect, the concrete is exceedingly dense, and the cost is much lower than has ever been possible for concrete work. Further information and prices may be obtained from the Concrete Mixing & Placing Company, 123 W. Madison street, Chicago.



### A Riveting Record Broken.

Above is a view taken during the construction of the new Open Hearth Building of the Youngstown Iron & Steel Co., Youngstown, Ohio, the work being done by the Fort Pitt Bridge Co. of Pittsburgh. Special interest in the job lies not only in the fact that No. 80 Boyer Riveting Hammers were used exclusively, but also from the fact that a riveting record was made as evidenced by the following article, which recently appeared in the Cleveland Leader:

#### Rivet Record Broken.

"Youngstown, O., Feb. 11.—All records for rivet driving in eight hours' work were broken yesterday at the plant of the Youngstown Iron & Steel Company. A crew composed of Albert Stafford, driving, Reese Ramsey, heating, with W. Green and B. Bransfield assisting, placed 2,416 rivets. The former record is said to have been made in Cleveland in 1908."

Hobo—Yes'm, I wunst had a good job managin' a hand laundry, but it failed on me.

Lady—Poor man. How did it happen to fail?

Hobo—She left me and went home to her folks.

### The Laconic Turn.

"The official war dispatches," said George Horace Lorimer, the Philadelphia editor, "are too laconic. What a pity our professional correspondents can't go to the front!

"A laconic turn is the last thing to be desired in a war dispatch. A laconic turn is only advantageous in regard to things humorous or odd—like, for example, the remark of the old veteran.

"This old veteran, describing a campaign, said:

"'And that day we were so hungry, by jiminy, we had to eat weeds. Ever eat weeds?'

"'No,' said his audience.

"'Well,' said the veteran laconically, 'I dunno as ye missed much.'"

### Needed to Be Explained.

Mrs. Hennessey, who was a late arrival in the neighborhood, was entertaining a neighbor one afternoon, when the latter inquired:

"An' what does your old man do, Mrs. Hennessey?"

"Sure, he's a di'mond cutter."

"Ye don't mane it!"

"'Yis; he cuts th' grass off th' baseball grounds.'"



# IDEAL POWER

PUBLISHED MONTHLY  
In the Interest of Compressed Air  
and Electrical Appliances

BY THE

**IDEAL POWER PUBLISHING CO.**  
1014 Fisher Building  
CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. 11.

MAY, 1915.

No. 5.

## TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 50 cents per year

## ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our  
subscription list.

## Removal Notices.

On April 20 the New York office of the Chicago Pneumatic Tool Co. were removed to 52 Vanderbilt avenue, instead of 50 Church street. The new address is at the corner of 45th street and Vanderbilt avenue, directly opposite the Grand Central Terminal. The new telephone number is Murray Hill 8580.

The Boston office of the company has been removed from 191 High street to 185 Pleasant street.

## Do You Ever Do Any Circularizing?

If you do, send us \$3.00 for a complete directory of the boiler, tank and stack manufacturers of the United States and Canada. The list is up to date and is authorized by the American Boiler Manufacturers' Association of the United States and Canada.—Editor.

## Death of W. H. Traver.

The many friends of Wilber H. Traver were shocked to learn of his death, which took place at Houghton, Mich., on April 15th. His duties as manager of the mining department of the Chicago Pneumatic Tool Company called him out of town frequently and it was on one of these trips that he was taken with pneumonia which developed so rapidly it was impossible to bring him home. Of all

the mining districts with which he kept in touch the iron and copper country of northern Wisconsin and Michigan was nearest and dearest to him and it was there that he passed away.

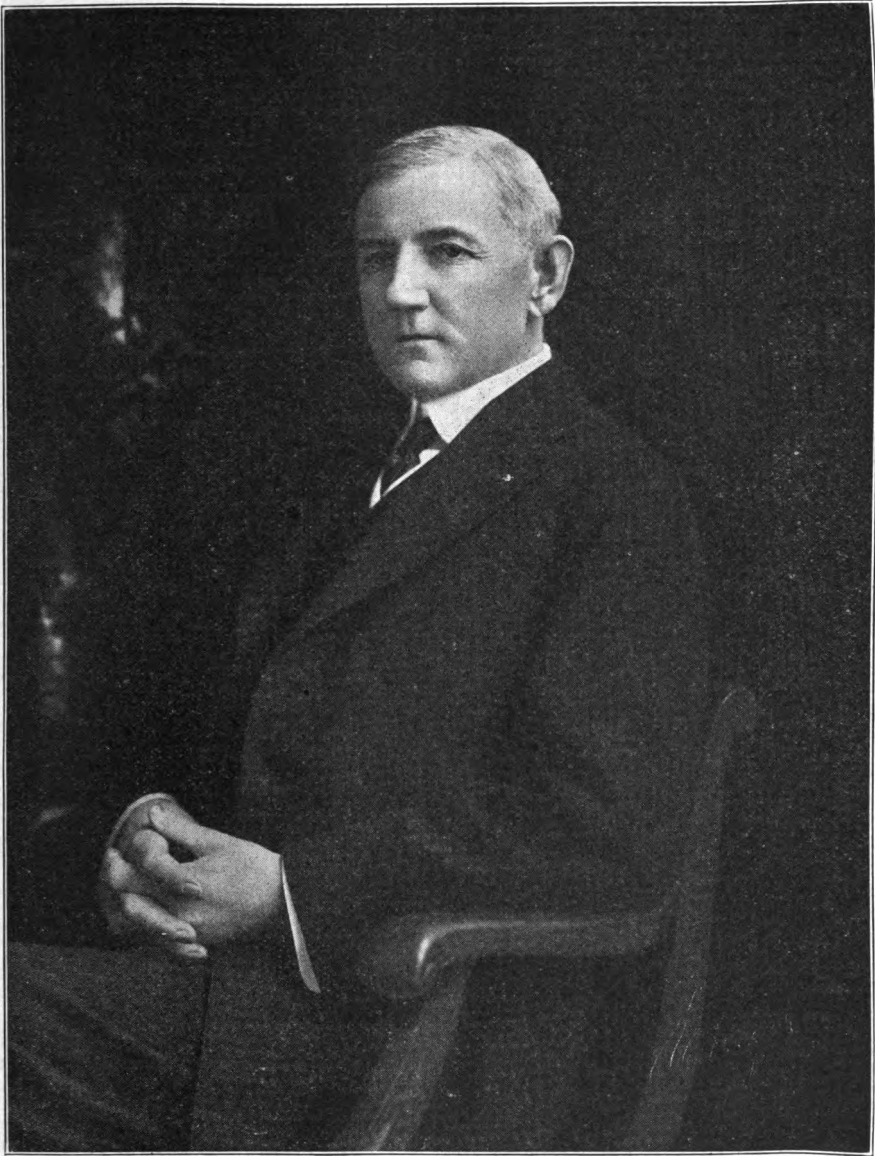
Mr. Traver was born in Michigan fifty-two years ago, but moved to Kirtland, Ohio, while still very young. The mechanical profession appealed to him, at first marine and later railroad work, and in this he made rapid progress, advancing to the position of master mechanic in various shops of the Santa Fe. But "Bill" Traver, as he was familiarly called, had such a knack of making and holding friends that he drifted naturally into the selling end of business and took a position in the sales department of the Rand Drill Company, with which he was connected for a period of fourteen years.

In 1906, shortly after the Rand Drill Company and the Ingersoll-Sergeant Company consolidated their interests and formed the Ingersoll-Rand Company, Mr. Traver cast his lot with the Chicago Pneumatic Tool Company, in whose service he remained until his death.

Mr. Traver's thorough mechanical knowledge and experience, particularly in the field of compressed air machinery, served him well during the many years that he kept in touch with the mining industry, and few men have to their credit as long a list of sales and installations as had "Bill" Traver.

Mr. Traver's club associations were many. He belonged to the St. Louis Railway Club and the Western Railway Club of Chicago, the Elks' lodge No. 447 of Ishpeming; and in the Masonic orders he was affiliated with the Blue Lodge of Jackson, Mich., the Chapter at Ravenswood, the Commandery at Denver and the Shrine at Leavenworth, Kan. He was also a member of the Illinois Athletic Club and of the Lake Superior Mining Institute.

Mr. Traver left a wife and two sons, Delmar R., and Weir H. The funeral services were held at his home, 4339 N.



Wilber H. Traver.  
1863—1915.

Hermitage avenue, Ravenswood, Chicago, Saturday afternoon, April 17th, but the final interment was at his old home in Kirkland, Ohio, on the Sunday following, which was attended by a large delegation from Chicago which chartered a

special car for the purpose.

Every unit in the Chicago Pneumatic Tool Company organization feels a personal loss in the death of Mr. Traver and the sincerest heartfelt sympathy is extended to the bereaved family.



Showing Foster's Little Giant Loaded with Large Wooden Tank. See article below.

**The Motor Truck in the Retail Lumber, Coal and Contracting Fields—How a Little Giant Meets the Requirements.**

A prominent concrete-cement trade journal of Detroit, Mich., recently undertook to present to its subscribers some first hand data on the use of motor trucks in retail lumber, coal and contracting field. One of their letters of inquiry was addressed to the Foster Lumber & Coal Co., Valparaiso, Ind., and with their permission we are quoting from a letter in which they get right down to "brass tacks."

Gentlemen: We regret to find that your inquiry of the 28th ult. as to motor trucks has been mislaid in our office and not answered with more promptness.

We use a Little Giant one-ton truck, manufactured and sold by the Chicago Pneumatic Tool Company of Chicago, Ill., which has been giving us exceptionally good service. While its guaranteed capacity is only one ton, it is very strongly built and we carry nearer two tons than one a good share of the time,

although we do not aim to use it for heavy hauling.

Our primary purpose in buying a truck was to get something to handle light orders quickly. So often we find that a contractor will have a job away on the other side of town for which we have furnished the material and, when he gets about done he finds that he needs a couple of sacks of cement, a few bunches of shingles, or the like, and at that point of the job he wants his material quick. Often it would take a horse and wagon two or three hours to take care of such an order, and in the meantime the workmen are standing idle and the contractor is cussing the service. But with a truck, we can pile on two or three of these orders in different parts of town at a single trip and the truck is back in less than an hour, the work goes on without delay, the contractor is a satisfied customer, and the material is sold at a profit rather than at an actual loss, as was often the case when we had to send a team on a long trip with a small item.



Delivering a Load of Coal with Little Giant Truck Owned by Foster Lumber and Coal Co., Valparaiso, Ind.

We also do a contracting business along with our retail yard, and here the truck is invaluable, especially for country work. Without the truck it was almost impossible for us to make a profit on country work for, if the men drove back and forth, the lost time going and coming consumed all the profit, and where we had to board them the result was the same. Now we handle nicely jobs anywhere within a radius of ten miles. The truck leaves town at 6:30 a. m., has the gang on the job ready for work at 7, comes back to town and does a day's work delivering, and is back at 5 to bring the gang back home. No time is lost and the boys are all kept good natured because they get home as soon as they would if they were working in town.

During the winter we use our truck to very good advantage hauling quarter, half and ton orders of coal, and here again it proves most efficient as a time saver, with small orders. We do not load directly into the truck body, but

use 100-lb. canvas bags. Heretofore, on very cold days we would often get more orders than we could deliver in one day, but since we have used the truck we have not had to pass up a single customer for, when we see the wagons can not make them all, we load on a few bags of coal to run the different customers through the night and the truck has them supplied in very short order, then the wagons complete the order next day. This feature has proved a far more potent trade getter than one would suppose at first thought.

As to cost of operation, mileage considered, the truck is a good deal cheaper than horse-and-wagon delivery, and from a standpoint of service there is absolutely no comparison. For a live, up-to-date lumber dealer, material man or contractor, an auto truck is indispensable—at least, such has been our experience.

Yours very truly,

FOSTER LUMBER & COAL CO.,

Byron Smith.

Feb. 8th, 1915.



Two Views of a Little Giant Truck in the Coal Business at Washington, D. C.

### Little Giant Truck in New Range of Sizes.

One of the big mistakes made by auto truck manufacturers and dealers in the early days of the truck business was the rating of truck capacities in terms of tons and half tons instead of employing some sort of phraseology that would be intelligible to the average merchant. The hardship of course falls heaviest now on the builder who makes but one design. The prospective user of a truck is apt to jump at conclusions and decide in his own mind long before he is able or wishes to buy that he wants a truck of a certain rated capacity, when as a matter of fact, if his problems were carefully studied, a lighter or heavier truck would answer his purpose far better and be more economical and satisfactory in the end than the truck he has set his mind to get.

The average customer, when buying a truck of rated capacity, figures his average load as capacity. As a result his truck is overloaded a great deal of the time. At best any piece of machinery, when operated at full capacity, has a limited life of usefulness, whereas if run at three-quarters of its capacity its life may be practically doubled. This does not apply to motor trucks alone, but to any piece of machinery. On the other hand, there are customers who buy a truck with a capacity equal to the maximum load, with the result that for possibly two-thirds of the year they run it at from one-third to two-thirds of its rated capacity. While the truck under these conditions may not receive any abuse and will last much longer, there is naturally greater and some unnecessary overhead expense. As a further illustration of the misuse of the word "capacity," many prospective buyers in looking over and discussing a truck confess it is their understanding that a one-ton truck weighs one ton, etc. These are the problems that a seller of trucks is up against, but the mischief has of course been done; custom has been established, and it is now up to the manufacturer to make the best of it.

The questions of length of hauls, maximum and minimum weight of loads, grades and conditions of roads, all enter into the proper selection of a truck, and when a prospective user presents these conditions in his inquiry, or where it is possible for the dealer or manufacturer to investigate and determine these factors, the selection of a truck of proper capacity is invariably secured.

Horse and wagon delivery has hundreds of years of experience back of it, while auto delivery—radically different in many respects—has but a few years of experience from which to draw its conclusions and base its theories and practices, and many a disgruntled truck user was the victim of poor judgment in the selection of a truck. The burden of this fell upon the manufacturer—and the truck industry has had plenty of work to do to correct these early mistakes and erase their effects on the minds of skeptical prospects. The outcome has been that truck makers—recognizing the varieties of conditions to be met—have been compelled to increase their range of capacities and designs. The maker of a truck of only one capacity was up against the same problem that a clothier would be if he carried suits of but one size in his stock. Both fat and lean would wear the same size of garment and the misfits would be many and the results possibly disastrous.

When the Chicago Pneumatic Tool Co. entered into the business of truck making all efforts and energies were expended on the production of a single design of truck, with the result that mechanical details were thoroughly and carefully worked out to their logical conclusions. The demand for trucks of lighter and heavier weight capacity made it quite necessary to design the Little Giant to meet all these demands, and a range of four sizes has already been brought out, known as  $\frac{3}{4}$ , 1,  $1\frac{1}{2}$  and 2-ton capacities.

But as previously stated these sizes are to a great extent misnomers, as few purchasers know how to use them in-





This is the Olive Factory owned by J. C. Kubias, Redlands, Cal., with his Little Giant Truck in foreground. Mr. Kubias is enthusiastic over his Little Giant, and although we have published many articles giving details of his experiences with the truck, this is our first opportunity to print a picture of his establishment.

telligently, and the proper thing for a prospective buyer to do is to go to a manufacturer of reliability, state his conditions and get a truck that the manufacturer recommends. In his effort to make a satisfied customer he will prescribe the best truck that his judgment and experience dictate.

#### Modern Grammar.

A young lad, just returned from boarding school, upon being asked by "dad" how he stood in grammar at the end of the term, came back with something like this:

"Say, dad, take it from me, grammar was my long suit. On the start I was up against it hard. Couldn't get it through my noodle. Fell down every time I went to class. Finally I says to

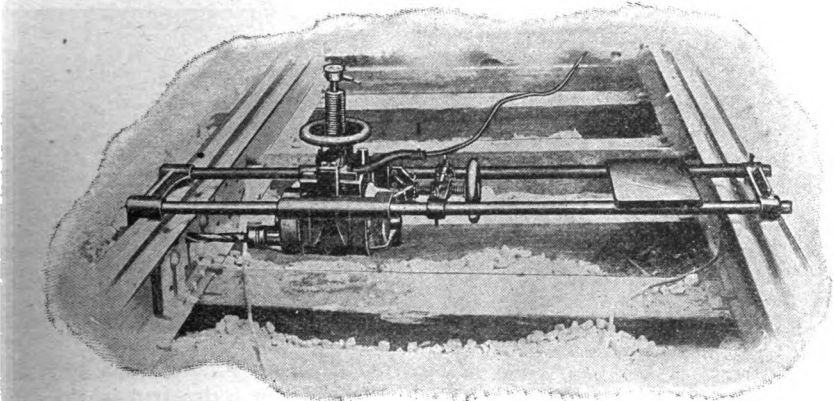
myself, look here, old kid, it's up to you. You've got to cut out the funny business and take a brace or you'll see your finish, the surest thing you know. Well, I studied, believe me. And say, when it come to the final exams, did I lose out? Not on your life. I was right there with bells on. There was certainly some class to the way I answered those quizzes. A cold mark of ninety-five when it was all over. Not so worse, eh? Can you beat it? How I did it, I don't know. You can search me. But anyhow it's going some, eh, dad? None of 'em's got anything on me when it comes to grammar, that's a cinch."

The old gent managed to gasp, "Get the hook."

According to statistics, there are more men with blockheads than wooden legs.

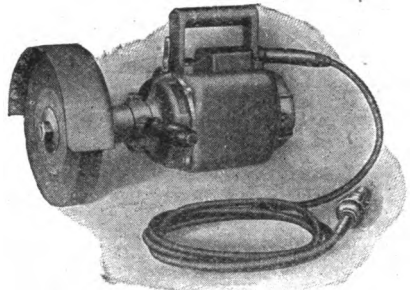
# Apply Electricity To Your Track Problems

## by using Duntley Electric Tools

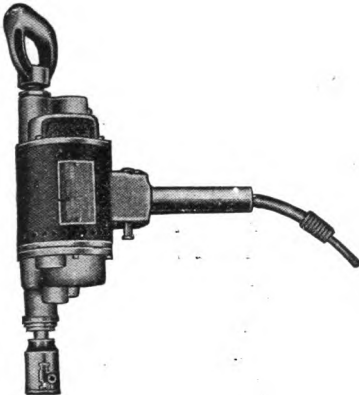


Duntley Electric Track Drill

Duntley Electric Tools with their wide range of adaptability are establishing new standards for economical construction and maintenance on track work and in the shop. It will be worth your while to investigate. These tools are now used by hundreds of street and interurban railways.



No. 8 BP Grinder



## "DUNTLEY" Electric Drills

for all purposes, operating interchangeably on direct or alternating current.

Attach to ordinary lamp socket.

Write for Bulletins and Prices

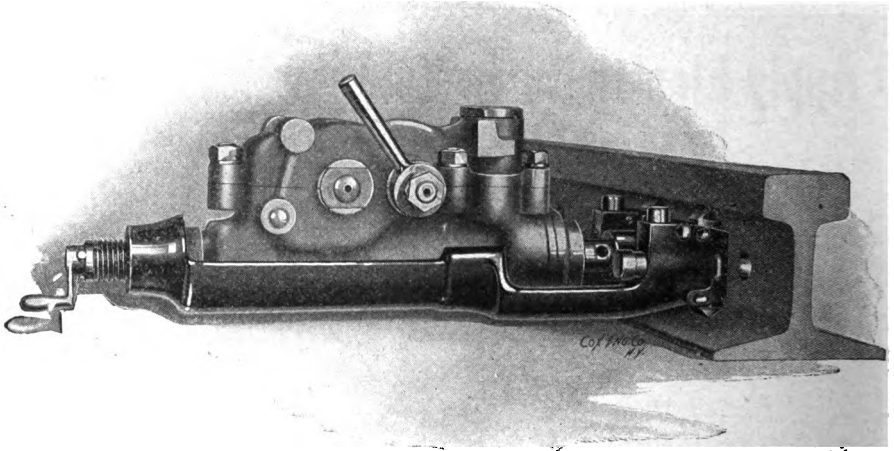
# CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Building  
CHICAGO

BRANCHES EVERYWHERE

52 Vanderbilt Ave.  
NEW YORK





The "Wedglok" Drill.

#### **A New Tool for Track Drilling.**

In drilling track for bonds or joint holes where the traffic is heavy and the trains frequent, it is often desirable to use a tool which does not have to be lifted off the track. The "Wedglok System" described herewith was devised to take care of this condition. The Wedglok drill is made in two types—the power driven drill and the hand drill, which are similar in many respects, particularly relative to the fastening mechanism, frame and bits.

The power driven drill can be operated either by an electric drill motor or an air tool. It is attached directly to the rail and made secure by striking the horizontal driving wedges with a hammer. The driving spindle is supported by a rigid frame and held in alignment by means of long bearings. The drilling mechanism and bit are moved to contact with the rail by means of the small crank in the rear and the drilling spindle which is rotated by the power tool is automatically fed by a cam, controlled by an automatic friction feed. This feed can be increased or decreased to suit the varying conditions by means of the small lever shown on the side of the drill. One revolution of the feeding cam automatically feeds the bit through the rail and when the revolution is completed a powerful spring throws the drill spindle automatically back to position.

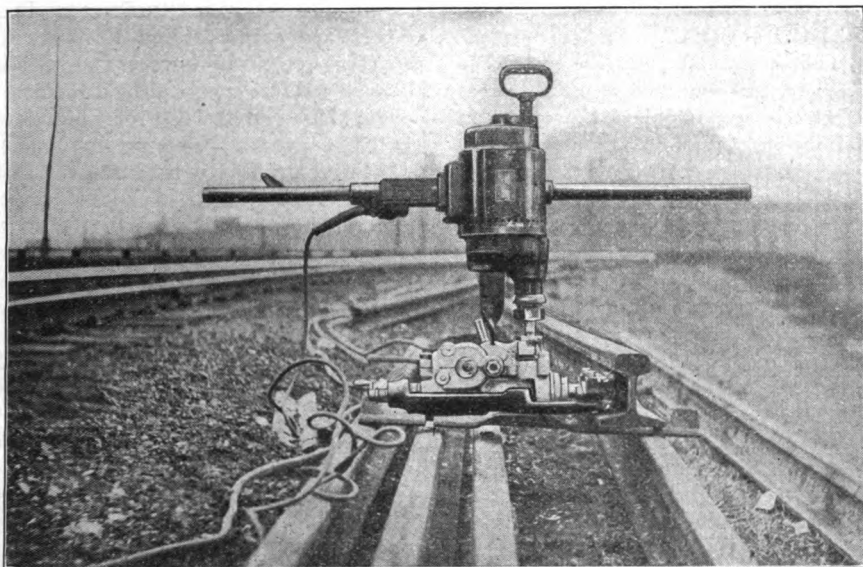
The bit is specially designed with a conical tang which is inserted in the conical spindle socket. It is driven by two lips on the spindle at a point where the greatest mass of metal lies. The shortness of the bit and method of holding makes possible the use of a very hard bit without breaking. The drill frame can be removed from the rail by striking the vertical retracting wedges with a hammer, thus withdrawing the clamping points.

The manufacturers recommend the use of two power driven track drills with one electric or pneumatic driving motor. In this manner, one man can set and remove the drills and the other man operate the electric tool.

It is claimed by the manufacturers that straight round true holes can be drilled dry in hard rails at a very high rate of speed.

It will be readily seen that the drill does not in any way obstruct the track and that by simply removing the electric or pneumatic motor from the Morse taper shank which projects vertically, there will be no obstruction to the passage of trains. The manufacturers are also having ratchet hand drills made on the same principle for track work.

Further information regarding the Wedglok system may be obtained from the Prince-Groff Co., 50 Church street, New York.



Two men, two "Wedglok" Drills and one Duntley Electric Drill No. 3 drilled 304 one-inch holes in 100-lb. Bethlehem Steel Open Hearth Rail in 9½ hours. Only six bits were dulled, none broken. The rails were lying as they were thrown from the cars.

### Drill Chips.

Just as Cleveland twist drills hold a unique place in mechanical appliances so does Drill Chips, the company's monthly publication, hold a place of its own among trade publications. The editor is a philosophic wag with a double-cylindered imagination and a spiral fancy that revels in apt illustrations and fine similes. He is a poet in disguise. His pen is as sharp as a twist drill. He never wobbles, but goes straight through, the cutting edge of his polished pen leaving a smooth impression. He is one of the few writers that can mix complex machinery with profound philosophy, and as he untwists his flowing periods he never grows dull. Like the Cleveland twist drill he would be hard to beat.

A German paper contains the following unique advertisement: "Any person who can prove that my tapioca contains anything injurious to health will have three boxes of it sent to him free of charge."

### Sh! Don't Wake Him Up.

I wish I was a rock a-sittin' on a hill.  
A-doin' nothin all day long  
But just a-sittin' still.  
I wouldn't eat,  
I wouldn't sleep,  
I wouldn't even wash;  
I'd just sit there a thousand years  
And rest myself, By-Gosh!

(From February Ideal Power.)

Just one more "crack" at that fellow who has no more ambition than the rock which he mentions in the little verse in the February number of "Ideal Power": That man who wished he was a rock A-sittin' on a hill,  
Would be a blessing to mankind  
If he could keep that still.  
He couldn't cuss,  
He couldn't knock,  
He couldn't take up room  
That's needed by the man who tries  
To make this old world "boom."  
—Enthusiastic reader of "Ideal Power."

**Soldco.**

SOLDCO or BELT LIFE means exactly what it says. It gives life to leather belts. The man who will appreciate this is he who is responsible for profits and economies in manufacturing institutions of any kind where leather belts are used. SOLDCO penetrates the fibres of new and old belts, making the leather soft and pliable, causing every inch of the belt to hug the pulley and resulting in at least 20 per cent more transmission than in belts not similarly treated.

What is SOLDCO? Its principle ingredient is a product used in the manufacture of Russian leather, which for years has been a secret possessed by the curriers of that country. By currying with SOLDCO it imparts to leather that lasting quality, subtleness and odor that makes Russian leather so famous and expensive. SOLDCO is non-volatile, non-inflammable, non-combustible. It is guaranteed to be non-acid and keeps liquid under all atmospheric conditions. It leaves the surface of belts dry and non-adhesive and is therefore highly recommended for belts running under extreme dust conditions. It makes leather impervious to moisture or chemical fumes. It waterproofs it after the first application and it is easy to apply.

It is a well known fact that in changing hide into leather, tanners remove all the natural oils and fats, leaving the bare fibre. SOLDCO penetrates these fibres, lubricates and protects them and imparts to the leather the qualities which the processes of tanning removed.

In addition to its use as BELT LIFE, SOLDCO is splendid for treating harness and saddlery and for water-proofing, softening and preserving the leather of boots and shoes. The leather of automobile clutches when treated with SOLDCO is given renewed life and keeps soft and pliable and thoroughly effective as a clutch for from 60 to 90 days after each application. It is also excellent for removing dust stains, finger marks, grease and dirt from the leather trimmings of coaches and automobiles and when applied to steel or iron, prevents rust. The same remarkable quali-

ties it possesses in the treatment of leather are demonstrated in the treatment of hoofs of horses and keeping them in natural and healthy condition.

The Griffin Wheel Co. of Chicago recently made some laboratory tests of SOLDCO, brief extracts from which follow:

"Laboratory tests were first made to determine if these dressings contained substances which are considered to be more or less injurious to leather such as rosin, mineral oil, acid, soap, etc.

"In this test we found SOLDCO to be the only dressing free from one or more of the substances mentioned. SOLDCO appears to be a fish oil. It readily penetrates leather and keeps it pliable and at the same time does not produce an oily surface on the belt unless used in too great quantities. We also found that there was very little accumulation of dirt on belts treated with SOLDCO, whereas the rosin dressings gathered dust readily and gummed both on the belt and the pulley.

"To further determine the efficiency of SOLDCO, tests were made on belts operating under different conditions, one in a dusty place, one in a hot place and one in a cool and clean place, and it was found to stand up equally well under all conditions mentioned.

"On one of our belts, which has required a daily treatment of belt dressing and on which a total of one pound per month has been used, we found that one application of  $\frac{1}{4}$  pound of SOLDCO put the belt in such a shape that it was not necessary to make a further application during a month's period. At the same time the average slippage on this belt was reduced from 4 per cent to 2.02 per cent.

"Another test was made with SOLDCO in our compressor room. In this test a new 16-inch by 42-foot belt was dressed and put in service May 13th. The total area of this belt was 112 square feet and to properly treat it (2 coats) required two pounds of SOLDCO. To date this belt has required no further treatment, and, while it is true that our compressor belts operate under

conditions which necessitate the use of but little dressing of any kind, still the SOLDCO has kept this belt pliable and in excellent condition and has been of benefit."

For further information regarding SOLDCO Belt Life, those interested in it are invited to correspond with The Chicago Pneumatic Tool Company, Fisher Bldg., Chicago.

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Our New York correspondent asks us if we ever stopped to think:

That you cannot get into any saloon in New York on Sunday?

---

That they are all too crowded?

---

That the wind is tempered to the shorn lamb?

---

That it always seems mighty ill-tempered, if you happen to be the lamb?

---

That if you want to go downtown the worst way, you should take the subway?

---

That it is annoying to be taking a bath when Opportunity knocks at the door?

---

That the marriage rite is about the only right we grant to women?

---

That faint heart never won fair lady?

---

That many men wish they had been faint-hearted?

---

That great oaks from little acorns grow?

---

That if you don't believe it, you can plant one and stick around for a couple of hundred years?

---

### A Costly Possession.

"Who gave you that black eye?" asked the fond mother sternly.

"Nobody gave it to me," answered her young hopeful. "I had to fight for it."—Exchange.

### These Men Want Jobs.

Pneumatic Tool repair man with sixteen years' experience wants steady job where good work will be appreciated. Address Ad-2, care Ideal Power.

Air Tool man with railroad experience desires to make a change. Could take entire charge of pneumatic tool department. Address Ad-3, care Ideal Power.

A foreman boiler maker with long and creditable experience, with thorough knowledge of pneumatic tools and with best of references, wants position with some railroad. Address Ad-4, care Ideal Power.

A superintendent of steel construction, with twenty-two years' experience, wants to connect up with some reliable concern. Can furnish best of references. Address Ad-5, care Ideal Power.

A first-class boiler inspector of long experience and excellent habits and character, desires a position. Understands pneumatic tools thoroughly. Address Ad-6, care Ideal Power.

A pneumatic tool man with nine years' experience in one of the largest railroad shops of the country wishes to locate in the northwest. Address Ad-7, care Ideal Power.

---

### Getting a Raise.

A year ago a manufacturer hired a boy. For months there was nothing noticeable about the boy except that he never took his eyes off the machine he was running. A few weeks ago the manufacturer looked up from his work to see the boy standing beside his desk.

"What do you want?" he asked.

"Want me pay raised."

"What are you getting?"

"T'ree dollars a week."

"Well, how much do you think you are worth?"

"Four dollars."

"You think so, do you?"

"Yes, sir, an' I've been t'inkin' so for t'ree weeks, but I've been so blamed busy I ain't had time to speak to you about it."

The boy got the raise.



Real art is to make it pay.

Excessive liabilities make marriage a failure.

True blue is a term, that isn't applicable to good milk.

The luxuries of life are the things one can dispense with.

A trial of adversity often makes a change of venue desirable.

Good digestion is needed when a fellow has to eat his own words.

Many a bright woman takes dancing lessons after she reaches 40.

A village editor tells us that hard cider is the spirit of the country press.

Yet a man hardly ever strikes a happy vein in the vicinity of his funny bone.

After a man has been married a year or two he looks as neglected as an old grave.

If a mule and a horse are hitched to the same wagon the mule looks as meek as any married man.

It should be a penal offense to grind out "Coming Through the Rye" on a hand organ in a prohibition precinct.

Many a young man who starts out in life under the impression that he is a

born leader, gets married and retires to the rear of the procession.

Mirrors are the poorest kind of flatterers.

Beware of the man whom children and dogs don't like.

A wise man guesses a woman's age ten years too young.

When she reads a historical novel she skips through the historic part.

Marriage is the monotony that relieves the excitement of life.

Dampness caused by a woman's tears is always oppressive.

Some men are pleasant to talk to and disagreeable to listen to.

Little things console us because most of our afflictions are little ones.

It is all right to keep smiling if you have anything to smile about.

The absent may be at fault, but those present always have good excuses.

The man who makes the best of everything should have no trouble in disposing of his goods.

Every doctor in a small town is fully convinced that he would have become world famous had he located in a city.

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# IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances  
By THE IDEAL POWER PUBLISHING COMPANY  
Fisher Building, Chicago

Vol. 11

June, 1915

No. 6

## Under the Salesman's Crust

By C. I. HENRIKSON

(Courtesy of American Magazine)

His heart is light. His share of the blessings of this world consists of good health and his job, and he is happy. He has a wealth of sympathy for the troubles of mankind, and they worry him—when he lets them. So he banishes them from his thoughts and learns to carry the light heart. You see, he is a salesman.

He wears a smile. Not because he is continuously happy. Not because the world goes out of its way to make him feel good. Beneath that smiling physiognomy lie pucker strings that could screw his face into a pickle dish if something should slip. But he smiles. He tries to forget the pucker strings. And he succeeds, and then smiles some more. You see, he is a salesman.

He is glad to see you. Not because he experiences any keen personal delight at seeing you. Not because your visage is always good for sore eyes to look at, but because he wants to talk to you. Not to the common everyday you that you wear in your buttonhole and that any and everyone may see, but the you that you keep under cover and trot out on occasions only. The you that has a good opinion of itself, and falls for a little flattery. The you that you recognize as your real self, but

seldom have the time or opportunity to visit with. He looks you squarely in the eye and says he is glad to see you, because he wants to meet your real inner self. You see, he is a salesman.

He holds his head up high, not because he is stuck on himself, but because he believes in his house and his goods. He is proud of them both. He holds his head up high, not because he looks down on his neighbor, but because he wants recognition, and plays his cards above the table. Representation means responsibility. Should he slip, it reflects on the house. It is always safe to be dignified. So he holds his head up high. You see, he is a salesman.

He is dressed in the latest fashion, not too loud, not freakish, but sufficiently up-to-date to give his house and his goods a modern setting. A hundred times a day he makes the statement that to keep on the firing line of progress, the trade must use his goods, or be classed with the back numbers. It's today and tomorrow with him, not yesterday. He can't talk modern improvements in a last year's suit. You see, he is a salesman.

He is clean, within and without. Not that he has webbed feet and feels strange out of a bathtub. Not because he suf-



fers when compelled to wear his linen for two consecutive days. But because he frequently finds his customers indifferent and apathetic, and has to get close to them. Frequently, too, some customer takes a shine to him and insists on seeing much of his society. So he can't take any chances. He has to be prepared. He has to play safe, so he keeps his clothing and his person clean and wholesome. You see, he is a salesman.

He is good-natured. Not because it is a family trait. Not because it is thrust upon him by the happy incidents of his career, but because he finds it both a convenience and a necessity. It is convenient to find business parley automatically lubricated by the oil of his good nature, and it is necessary, when coming in contact with people who have none of it, to call on his own supply and let it grease the ways. He is good-natured. Yes, he has to be. You see, he is a salesman.

He is smart. Not because he has gone to college and has a sheepskin to show for it. Not because he stays up nights and reads books. But because he has to be the master when closing in on a prospect, or a customer. He knows that in a hand-to-hand conflict the stronger wins, and when a prospect is at bay he must not only convince him, but he must make him want the goods. A fool can't do it. It calls for mastery of self and subject. The rebuffs and defeats which fall to his lot result in the mental alertness and refinement that spell education in a truly practical sense. He must be up to the minute. The latest news and intelligence must be toys in his hands. He must be smart. You see, he is a salesman.

He has courage. Not because he is a soldier at heart. Not because he is a volunteer and would rather fight than eat. But he has learned that that for which we seek does not always lie on the ground before us, but is hidden in secret, out-of-the-way places and must be ferreted out. A certain man must be seen. A hundred voices say, "You can't

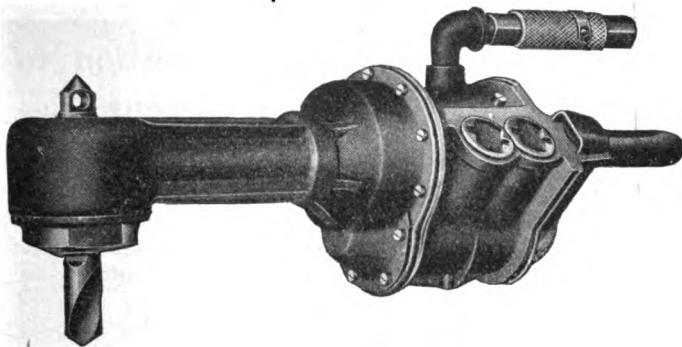
see him." A certain man must be reached. A hundred arms bar the way. Shall he shrink away or be pushed back? No, he must reach his man and meet him face to face. For the time being, at least, there are but two persons on earth, himself and his man. Forbidding hands, dubious headshakes, cautioning advice, are but the hurdles. He wins the race because he has grit and courage. You see, he is a salesman.

He is an optimist. Not because he loses orders or is frequently turned down on the very brink of success, but because at times he must create the very atmosphere he breathes. The cold water that is frequently thrown over him must either have the invigorating effect of a shower bath or he must permit himself to be drowned in it—and he prefers to live. Pessimism is deaf and blind. Optimism hears all, sees all. Defeat for him dares not spell pessimism, for pessimism means death. The prospects must always be bright. Though he sells confines his line must be a happy line. It must be a pleasure to talk his goods, to buy them and sell them. So he is an optimist, because he is a salesman.

Beneath the beetle's horny shell, folded away out of sight, lies a pair of thin, membranous, iridescent wings. Coaxed by the warm southwest wind it spreads them out on a summer evening and soars away into the mysterious distance.

And the salesman, footsore, weary and tempted by an hour of solitude, forgets his goods and his line, shuffles out of the uniform you have learned to know, and gives himself up to communion with his inner self.

Look at him closely. Those lines in his face didn't all come from smiling. That slight stoop in his shoulders didn't come from holding his head up high. The hand that grasped yours so gladly or patted you on the back with such emphasis sometimes lies open and limp, and all that is worth while in the world if placed in the hollow of his palm would not tempt his fingers to close over it. The courage that bids him face the lion in his den deserts him, when an



No. 3 Little Giant Corner Drill.

This drill can get into narrow spaces and drill holes up to  $\frac{7}{8}$ " that cannot be done with any other size or type of machine. Its high speed and its light weight are opening up new fields for pneumatic drilling. Its shape is such that it can be used to drill holes inside of a  $5\frac{1}{2}$ " circle, such as a  $5\frac{1}{2}$ " flue. On sheet iron work it is particularly handy, for the operator has a better view of his work and its light weight gives him easy control over it.

expected letter from home does not appear. The optimist, the man with such a fund of good nature, the smart man who can create demands and make men buy his goods, wilts when he sits alone and lets his hunger for the kiss of absent wife and babe take the nerve out of him.

A salesman is only human, but lets take off our hats to him for teaching us the practical value of the stiff upper lip and showing us how energy and persistence, when tactfully applied, bring home the bacon.

When times are dull and when the business world turns sour, when "Nothing doing" stalks through the land like a pestilence and paralyzes trade, the salesman, perpetuating the traditions of his calling, continues to spread a gospel of optimism that comes into its own at last. For the smile and handshake of the salesman, his resourcefulness and versatility, his politeness and good-fellowship are the very foundation stones of humanity in business.

But with all that, remember he is only human, and remember the beetle and its silken, sensitive, delicate wings which you cannot see; and when you turn a salesman down don't forget he is a man, and that you are nothing if you are not his brother.

### These Men Want Jobs.

Pneumatic Tool repair man with sixteen years' experience wants steady job where good work will be appreciated. Address Ad-2, care Ideal Power.

Air Tool man with railroad experience desires to make a change. Could take entire charge of pneumatic tool department. Address Ad-3, care Ideal Power.

A foreman boiler maker with long and creditable experience, with thorough knowledge of pneumatic tools and with best of references, wants position, with some railroad. Address Ad-4, care Ideal Power.

A superintendent of steel construction, with twenty-two years' experience, wants to connect up with some reliable concern. Can furnish best of references. Address Ad-5, care Ideal Power.

A first-class boiler inspector of long experience and excellent habits and character desires a position. Understands pneumatic tools thoroughly. Address Ad-6, care Ideal Power.

A pneumatic tool man with nine years' experience in one of the largest railroad shops of the country wishes to locate in the northwest. Address Ad-7, care Ideal Power.

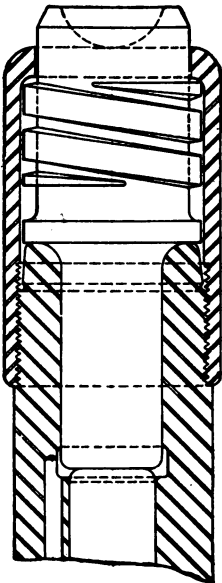
## Pneumatic Tools and Their Relation to the "Safety First" Movement

Pneumatic tools have not been overlooked in the "Safety First" movement that is today occupying the serious attention of the lawmaker as well as of labor and the employers of labor, and the Chicago Pneumatic Tool Company early recognized the need and the practicability of safety devices of various kinds.

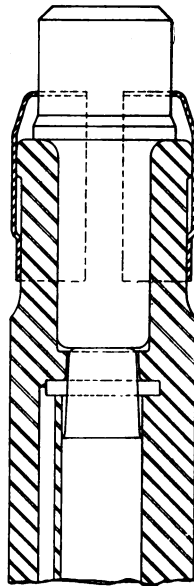
In pneumatic riveting there is always the danger of shooting out of the rivet set and the greater danger of shooting out the piston, and in the earlier designs of pneumatic riveters precautions were taken to prevent accidents of this kind. As a matter of fact, the first successful

pneumatic riveting hammer made was considerably complicated by mechanism designed to prevent the shooting out of the piston and rivet set. But workmen preferred the simpler though more dangerous riveting guns in which the safety devices were omitted, and while we have always had safety appliances of various kinds to offer we have never supplied them except on special request.

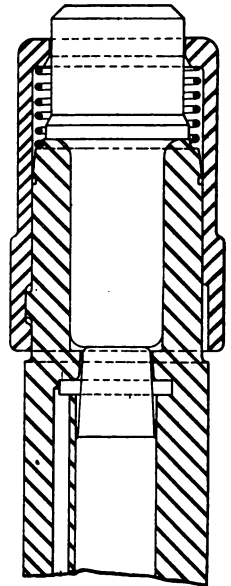
In this article we illustrate a number of safety devices which we can supply. Each has its peculiar advantages and we solicit correspondence with the view of recommending the style best adapted for certain classes of work.



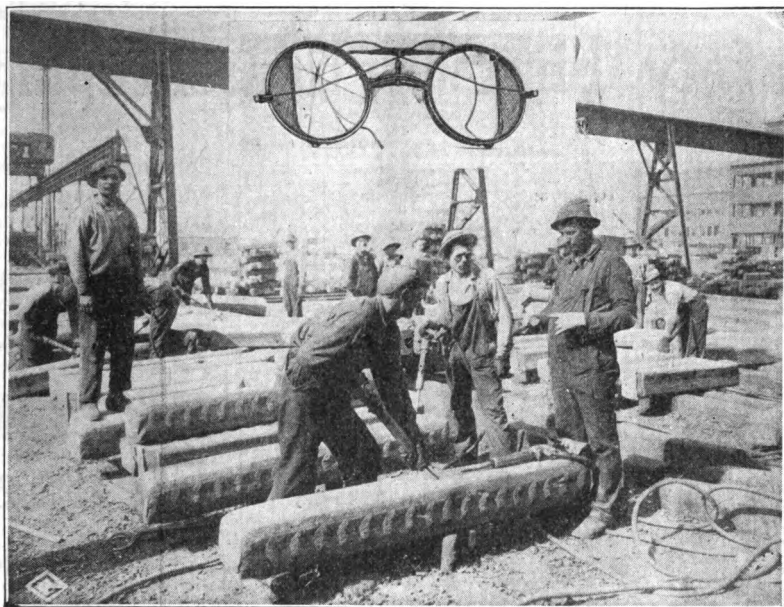
**TYPE MS**  
(Merrill-Shoffner)



**Type R W R C**  
(Retaining Wall  
Retaining Clip)

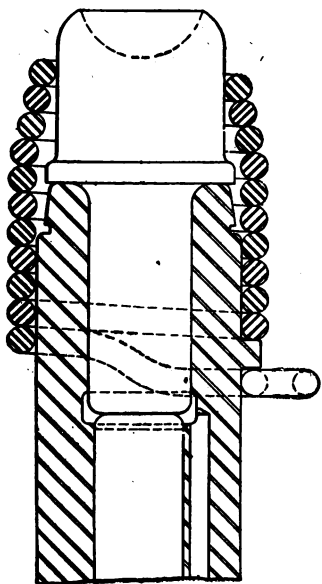


**Type R W I H**  
(Retaining Wall  
Interlocking Holder)

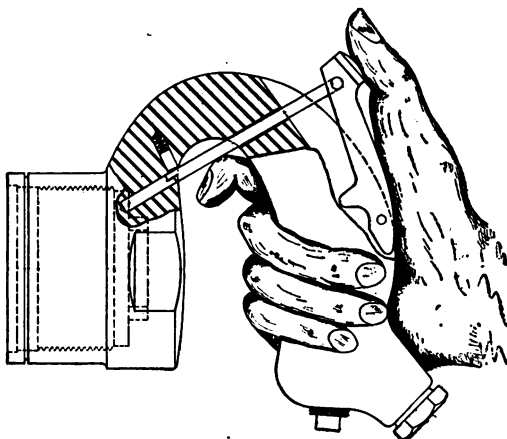


Use Goggles for Safety in Chipping.

At Gary Works Billet Mill chipping yard recently, Kasimir Janicki and Marcin Atlas were chipping on opposite sides of a billet. A chip flew from the other man's chisel and struck Janicki's goggles, breaking them, but the eye was uninjured. The above photo is reproduced through the courtesy of the King Optical Co.



Type S R  
(Spring Retainer)



Type B T L  
(Boyer Trigger Lock)

# Safety First in Housekeeping



demands that germs and dust and dirt be kept out of your carpets, rugs and draperies by the use of a

## Duntley Electric Cleaner

The most powerful and satisfactory portable vacuum cleaner made.

Made in sizes suitable for use in offices, hotels, theatres, churches, large or small homes, cottages or apartments, and for commercial cleaning.

If you believe in vacuum cleaning you will insist on a Duntley.

### AGENTS WANTED

Some Good Territories Still Open

## Duntley Products Sales Company

732 Michigan Ave., CHICAGO

I am in the market for a Duntley Electric Cleaner. Please quote me prices and send descriptive literature.

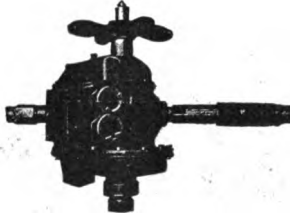
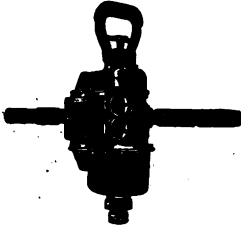
Name.....

Address.....

I am interested in agency proposition for following territory.....

# ACCIDENT BULLETIN

No. 64



## OPERATING AIR TOOLS

is NOT dangerous work if you wear goggles, yet since January 1st, 1914, 53 MEN HAVE BEEN INJURED badly enough to be laid up or need the doctor to dress the injury. The observance of a few simple rules will prevent many of these injuries.

## RULES

"All employes using pneumatic tools; except tappers, must wear goggles." 26 men were injured due to not observing this rule.

"When drills or reamers are stuck, always shut off power before releasing the tool."

"Do not look into or point a pneumatic hammer at another workman if it is connected to the air line."

"Never lengthen dead handles by applying bolt or pipe to it."

"Be sure that the machine will shut off immediately when the valve is closed."

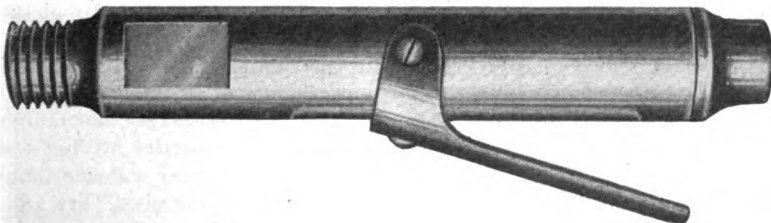
"If your machine is out of order, do not use it."

(CUTS LOANED BY CHICAGO PNEU. TOOL CO.)

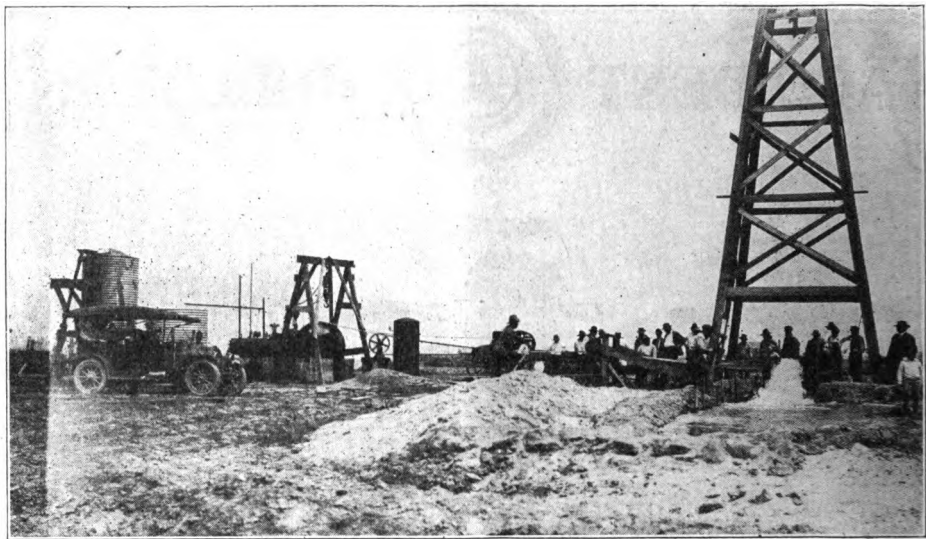
## WEAR YOUR GOGGLES.

 Vice President.

Showing how the American Locomotive Co. warn, instruct and protect their employes.  
(Published with their permission).



A Safety Throttle for Little Giant Air Drills. Closes Instantly When Hand is Removed.



View of the Young Pumping Plant Before Erection of Building.  
Giant A-DO Engine at Left.

### A-DO Engines in Irrigation Work in Louisiana.

A cut on the front cover of this issue shows the Class A-DO Giant Fuel Oil Engine which has recently been placed on the market by the Chicago Pneumatic Tool Company. The A-DO Giant Fuel Oil Engine consists of two A-O units arranged duplex. Two of these (size 14x14) have just been installed at Opelousas, La.; one of them sold to Dr. B. T. Young, the other to Evans & Chachere. The views shown above and on the page opposite are of the Young plant before the building was put up. The well is 10-inch diameter and is equipped with a Layne & Bowler patent vertical pump. The stream of water shown is 10 inches in diameter and is thrown a distance of 10 feet. The well is a little over 300 feet deep and the water stands 35 feet below the surface of the ground. No measurements were taken to ascertain how deep it falls, but the engine pumps 2,700 gallons per minute easily and this will thoroughly saturate twenty-five acres of the driest ground in nine hours.

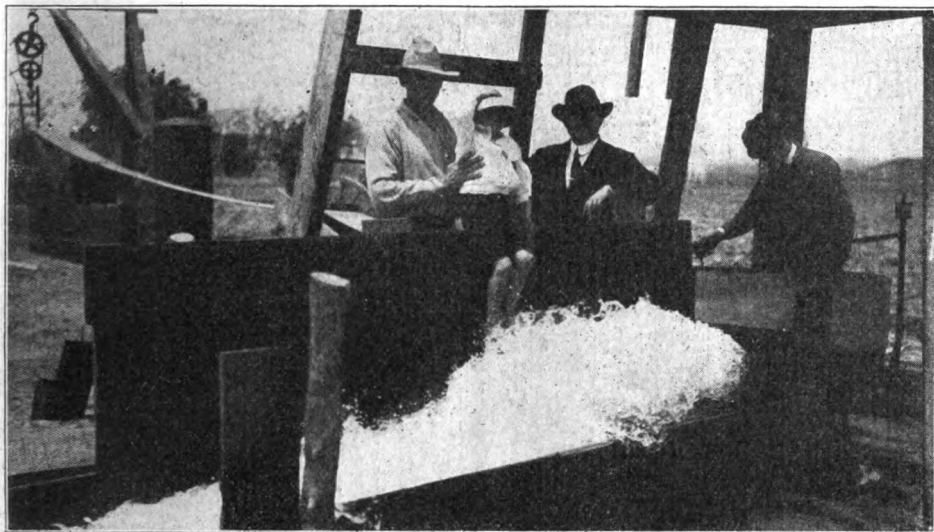
"Uncle Joe" Cannon was asked in Chicago a short time ago what he thought of the outlook for the Republican party in 1916, and he answered with a story: "A black man was arrested for horse stealing while I was prosecuting attorney in Vermilion county," he said. "He was placed on trial after being duly indicted. When his day in court came he was solemnly taken before the judge, who read to him the charge in the indictment. 'Are you guilty or not?' he was asked. The black man rolled uneasily in his chair. 'Well, boss,' he finally broke out, 'ain't dat de very thing we is about to try?'"

### A Modern Battle.

A military attache said at a Washington luncheon:

"Modern warfare has no picturesqueness. No beauty. A wounded soldier at Charleroi was asked to describe his impressions of a modern battle. He eased his face bandages and replied:

"'A modern battle? What's it like? Well, first you hear a deuce of a noise, and then the nurse says, 'Try and take a little swaller o' this.'"—



Closer View of the Well Opening of the Young Pumping Plant, Operated by Giant A-DO Engine.

### The Economy of Fuel Oil as Power.

A 300-ft. "Chicago Pneumatic" N-50 Compressor recently installed in Arizona was operated with "Tops," usually selling in Arizona at 6c per gallon delivered. At 8c per gallon the operating cost of the 60 H.P. Compressor was 27c per hour.

As it easily operates six Chicago Sinker or Stoper drills, the power cost per drill per hour would be 4¼c. Comparing this cost with electricity bought at 3c per kilowatt hour, it is just one-fifth, and you don't have to make a monthly guarantee to a power company. In a year the saving would be \$2,916.00 over the electric basis, or twice the original cost of the oil engine compressor. It will easily save \$750.00 a year by using "Tops" instead of gasoline although it uses either, as well as any oils of 28 degrees gravity or above.

Giant oil engines operate exactly the same and can be connected to anything you wish to operate.

If interested, write us for information and prices.

### Bouquets—(Brickbats are Not Published.)

"Your book is placed on our table in the men's smoking room, and our guests,—many of them up in engineering matters, seem to take great pleasure in reading Ideal Power, so please keep on sending it."—J. J. L., Brooklyn.

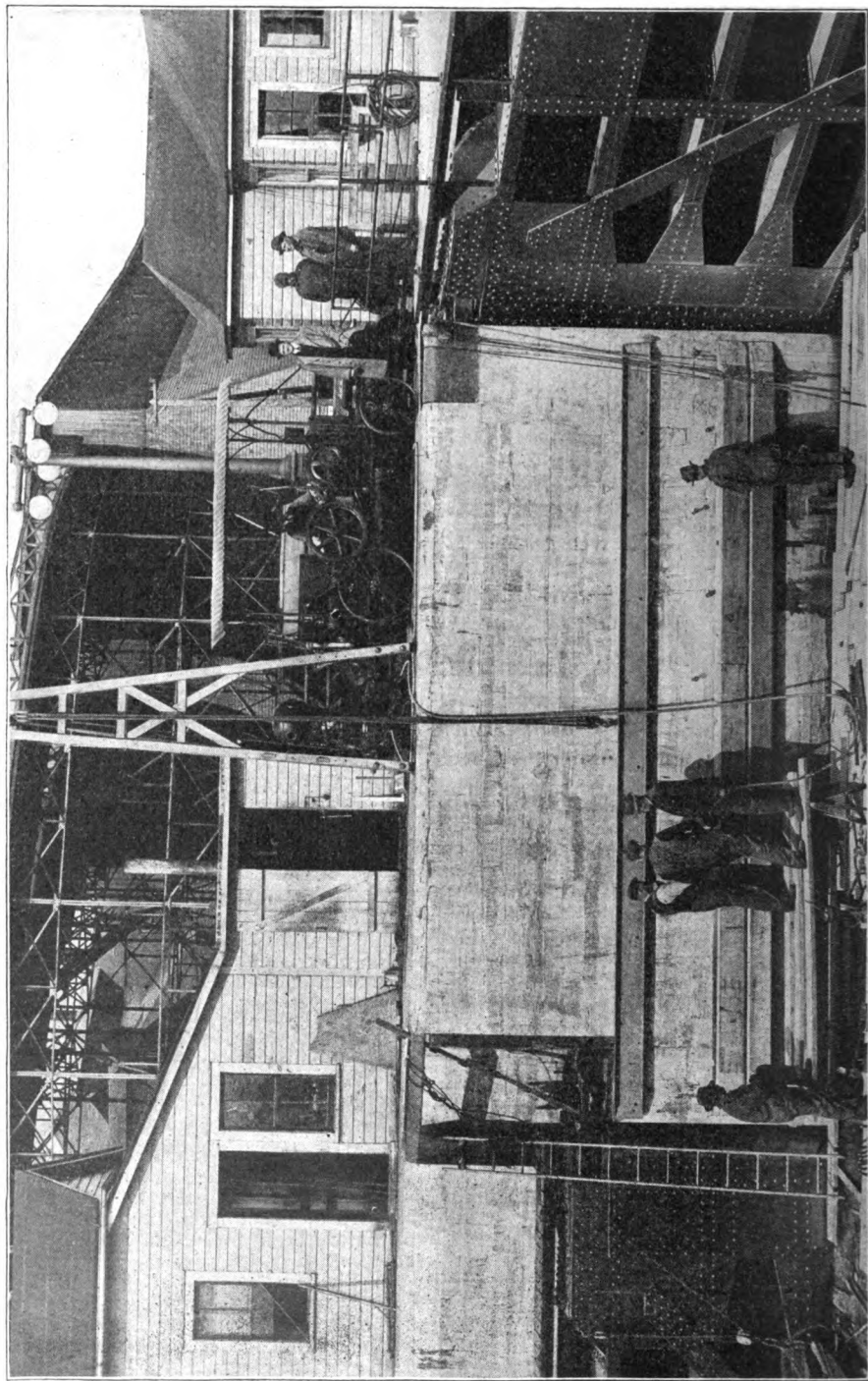
"It is one of the most readable little magazines that comes to my desk."—G. W. S., Elmira, N. Y.

"We are glad to receive and read every copy of Ideal Power that reaches us, which is more than we can say about a lot of other publications, and not house organs either."—M. E. Co., St. Louis.

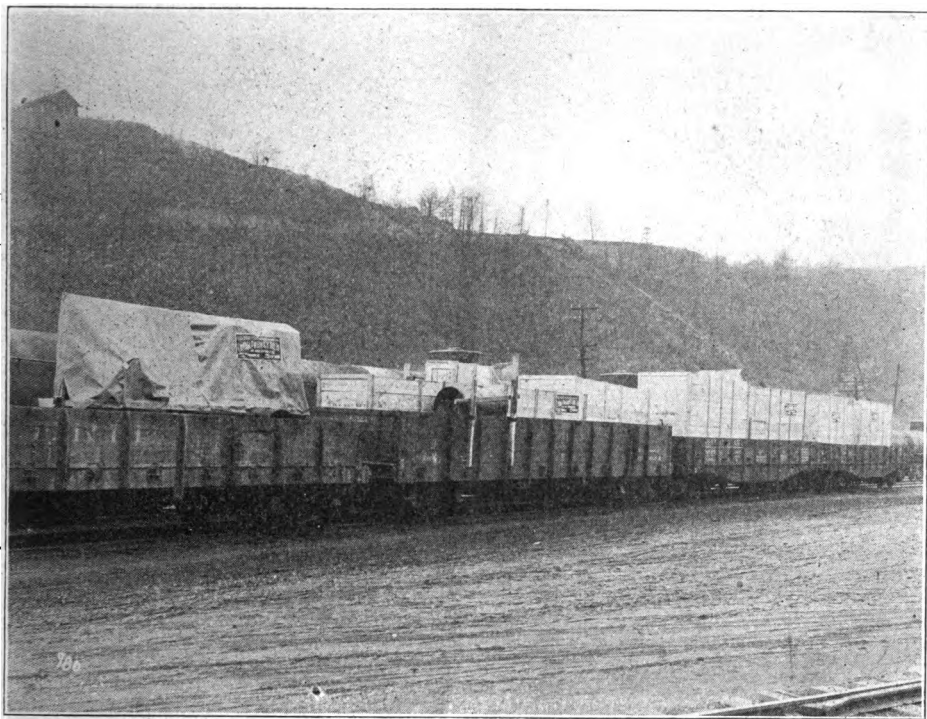
"I have received this publication regularly and have enjoyed it, as have other people connected with our company, largely on account of the interesting way in which the articles are written."—W. H. H., New York.

Gentlemen—I am sorry that I have not received the last issue of "Ideal Power," as there are many advertisements in it that are of great importance to me and to the different ones employed by the same company. Again, at different times when the mail on your desk and the work taxes you to the utmost, a few moments in looking over your book—it appears that there is still a ray of hope in the future in store for us.—J. B. S., Columbus, O.





Truck Mounted Chicago Pneumatic Class N-SBE Compressor on Black Rock Lock, Buffalo, N. Y.



A typical day's shipment of Air Compressors from the Franklin, Pa., plant of the Chicago Pneumatic Tool Co., where from sixty to seventy-five Compressors are turned out every month.

### Chicago Pneumatic Compressor on Black Rock Lock.

The photograph on the opposite page shows a  $7\frac{1}{2} \times 6$  N-SBE "Chicago Pneumatic" Truck Mounted Compressor, used on the Black Rock Lock, Buffalo, N. Y., to furnish air for sand blasting on the steel gates and for drilling in concrete and cement. A Keller  $1\frac{3}{4}$ -in. Valveless Rock Drill for drilling bolt holes 1 in. in diameter, 10 in. in depth and  $1\frac{1}{4}$  in. in diameter and 10 in. in depth; a Keller No. 5 Plug Drill for drilling holes  $\frac{5}{8}$  in. diameter, 6 in. deep, and a No. 80 Boyer Riveting Hammer equipped with M-S Safety Tool Retainer for heavy chipping in concrete and for riveting work on their steel gates, are operated by this compressor.

### Where Death Never Calls.

"Is Loneville a healthy place?"

"Healthy? Why, they'll have to kill the population on Judgment Day."

### A Poor Marksman.

Sergeant (disgustedly to Private Jones): "Stop! Don't waste your last bullet. Nineteen are quite enough to blaze away without hitting the target once. Go behind that wall there and blow your brains out."

Jones walked quietly away, and a few seconds later a shot rang out.

"Good heavens! has that fool done what I told him?" cried the sergeant, running behind the wall. Great was his relief when he saw Private Jones coming toward him.

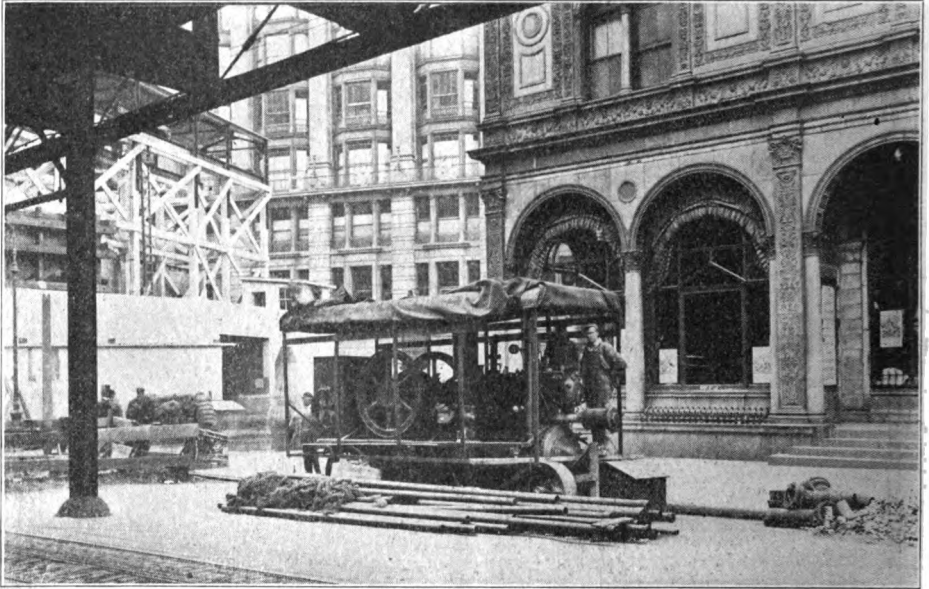
"Sorry, sergeant," he said apologetically, "another miss."—Boston Transcript.

### A—A—A—Ah.

Dentist—Open wider, please—wider.

Patient—A—A—A—Ah.

Dentist (inserting rubber gag, towel and sponge)—How's your family?—Harvard Lampoon.



This shows a "Chicago Pneumatic" Gasoline Driven compressor in use by the Consolidated Gas & Electric Co., the machine being at work in Herald Square, New York City. Immediately back of the compressor is the corner of the Herald office, and to the left is shown the structure of the subway contractor engaged in the operation of excavating a section of the new Broadway subway line. In the further background appears a portion of the R. H. Macy & Co. Department Store, which is located on the west side of Broadway, covering a block between 34th and 35th Streets. This compressor is one of three which the Consolidated Gas & Electric Subway Co. have in service, operating rock drills and other pneumatic tools in connection with the work of installing extensions of the conduits and mains.

#### The Reason.

Stranger (to a vis-a-vis in restaurant) — "I was kept on a strict milk diet a whole year."

Sympathetic Listener — "What was your ailment?"

Stranger — "Just infancy."

#### Made to Measure.

The Salesperson — "This is very fetching for a tub gown."

Mrs. Plumpleigh's Husband — "Better take it. A tub gown will just about fit your figure."

#### Jailless Crimes.

Killing time.

Hanging pictures.

Stealing bases.

Shooting the chutes.

Running over a new song.

Smothering a laugh.

Setting fire to a heart.

Murdering the English language.

#### Faith Needed.

Brown (on fishing trip) — "Boys, the boat is sinking. Is there anyone here that knows how to pray?"

Jones (eagerly) — "I do."

Brown — "All right, you pray, and the rest of us will put on life belts. They're one shy."

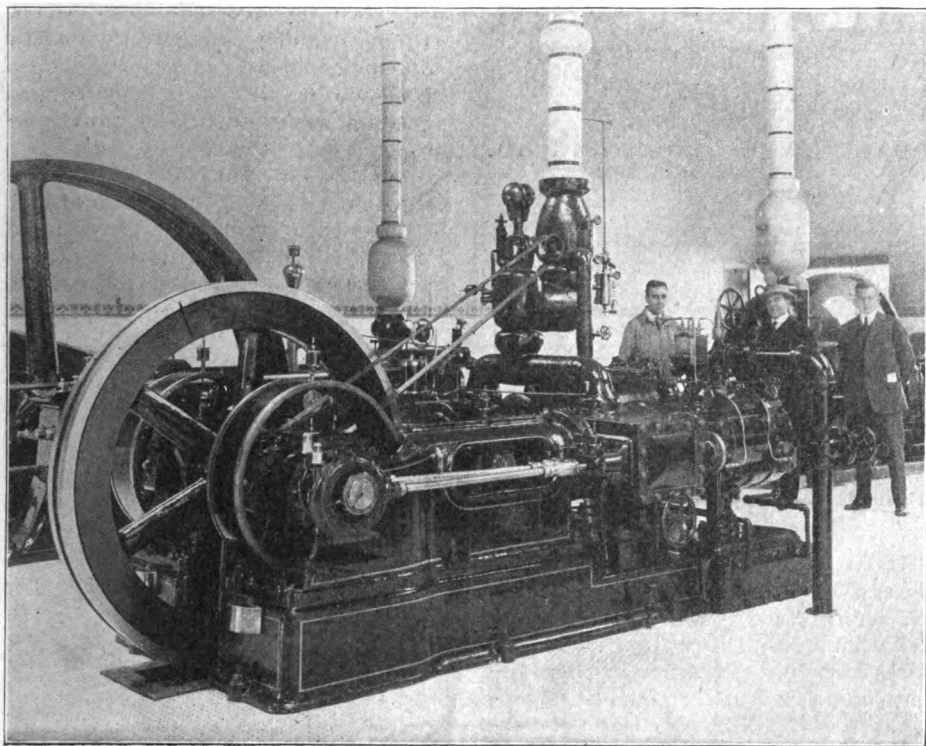
#### The Price.

Jean longed for a kitten. When illness made it necessary for Jean to go to the hospital, her mother said:

"I will make a bargain with you, Jean. If you will be a brave little girl about your operation, you shall have the nicest kitten I can find."

Jean took the ether, but later, as she came out from under the anesthetic, she realized how very wretched she felt. The nurse leaned over to catch her first spoken word.

"What a bum way to get a cat!" moaned the child. — *Harper's Monthly*.



This is a corner of the White Enamel Refrigerator Company's engine room in St. Paul and shows their "Chicago Pneumatic" two-stage steam and compound air compressor of 690 cu. ft. capacity. To the credit of Chief Engineer M. B. McEwen is due the fact that this is without doubt one of the best laid out, and cleanest and best kept engine rooms in the northwest.

The White Enamel Refrigerator Company manufacture the well known Bohn patent refrigerators used on the leading railroads in their refrigerator, dining and buffet cars. The extent of their business is indicated by their output for 1913, consisting of 11,482 refrigerator cars, 2,500 dining, buffet and observation cars were equipped with the Bohn refrigeration system by the Pullman Company who use this equipment as standard.

#### Gillilan's Burdette Story.

Here is a gentle little story which Strickland Gillilan told the other day. It concerns the late Robert J. Burdette and James Whitcomb Riley, and happened during Burdette's last summer on earth.

Somebody said to Riley:

"There is one thing about Bob Burdette that particularly impresses me. When he says, 'God bless you' he means it."

"Yes," replied Riley, "and God does it when Bob asks it."

Nick—"What does a billiard ball do when it stops rolling?"

Nack—"Oh, sits a while, and looks 'round, I s'pose."

Nick—"What'll you have?"

#### Hard on the Major.

Zealous Sentry—"Afraid I can't let you go by without the password, sir."

Irate Officer—"But confound you! I tell you I have forgotten it. You know me well enough. I'm Major Jones."

Sentry—"Can't help it, sir; must have the password."

Voice from the Guard Tent—"Oh, don't stand arguing all night, Bill; shoot 'im and come in to dinner."

Guest—"Look here! How long am I going to have to wait for the half-portion of duck I ordered?"

Waiter—"Till somebody orders the other half. We can't go out and kill half a duck."

# IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air  
and Electrical Appliances

BY THE

**IDEAL POWER PUBLISHING CO.**  
1014 FISHER BUILDING  
CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. 11

JUNE, 1915

No. 6

## TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 50 cents per year

## ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our  
subscription list.

### President Duntley Visits the Pacific Coast.

Mr. W. O. Duntley, president of the Chicago Pneumatic Tool Company, has just returned from an extensive trip to the Pacific Coast, where all of the branch offices and larger agencies of the company in California, Oregon and Washington were visited as well as the Panama-Pacific Exposition and intermediate points on the route. Business in connection with air compressors, rock drills and the Little Giant Truck was the chief object of Mr. Duntley's trip. More orders for Little Giant trucks have been booked in the last two months than for any like period in the history of the company, and the prospects for increasing business in this line are excellent.

### New Bulletin on Gas Engines.

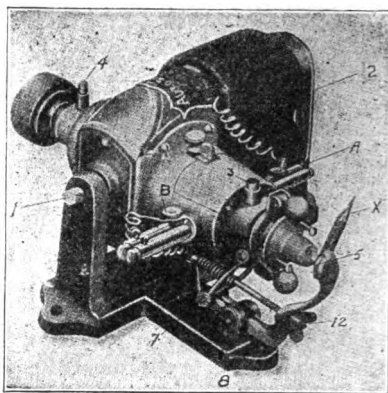
The Chicago Pneumatic Tool Co. has issued Bulletin 34-X, dated May, 1915, relating to their Class A-G "Giant" Gas & Gasoline Engines. The bulletin illustrates these engines in six sizes, ranging in horsepower from 16 to 130. The engines are similar in general design to the well known Giant fuel oil driven engines manufactured by the same company with the exception that they are designed for operation with manufactured or natural

gas. Their enclosed self-oiling features, extreme simplicity and perfect automatic regulation should recommend them throughout the field where manufactured or natural gas is available for power purposes.

Copies of this bulletin and further information relative to these engines may be obtained by applying to the Chicago Pneumatic Tool Co. at either of the offices above mentioned, or any of its branches in all principal cities.

### "A Word About Sparkers."

Magnetos or Automatic sparkers are usually an expensive equipment, at the same time all internal combustion engines must be provided therewith. Our attention has just been drawn to the fact that the Chicago Pneumatic Tool Company has an oversupply of the well



The Mottsinger Auto Sparker.

known Mottsinger Auto Sparker which they have used in connection with their gasoline and oil engines. Those operating motor boats, oil or gasoline engines would find it to their advantage to make inquiry regarding these Mottsinger sparkers as they can be purchased singly or the entire lot can be had at an exceptionally low price. It will cost you only the price of a stamp to get the details. Address the editor, please.



W. P. Pressinger, manager of the Compressor and Engine Department of the Chicago Pneumatic Tool Co., who has just transferred his headquarters from New York to Chicago.

Mr. W. P. Pressinger, Manager of the Compressor & Engine Department, Chicago Pneumatic Tool Company, has removed his headquarters from the company's offices at 52 Vanderbilt avenue, New York, to the Fisher Bldg., Chicago. The growth of the company's compressor and fuel oil engine business made this move desirable, as it enables him to keep more closely in touch with all of the company's branches.

On the occasion of Mr. Pressinger's departure from the New York office, he was presented with a handsome cane

expressive of the hopes of his fellows for a safe and pleasant journey, and as a memento to bring back recollections of sixteen years of close and pleasant association in the New York office of the company. Tom Aldcorn made the presentation speech, and although Mr. Pressinger enjoys the reputation of being the silver-tongued orator of the company, we are told a great deal had to be taken for granted in his speech of acceptance.

But we are glad to have Mr. Pressinger with us in Chicago and extend to him the hearty hand of welcome.





New Six-Wheel Little Giant Truck (Front View).

### NEW MOTOR TRUCK IS OF STARTLING DESIGN.

**Six-Wheeler Machine Can Easily Carry Three-Ton Load.**

The Chicago Pneumatic Tool Company has placed on the market a six-wheel truck. This is not a trailer proposition, but the last or third set of wheels is just as much an integral part of the truck as the first set. The new and valuable features of this truck are as follows:

First, low price when compared to high capacity; second, the small amount of upkeep charges for maintenance, consumption of gasoline, oil, etc.; its ability to turn around in a 36-foot space, even when carrying lumber 40 feet long. As an example of its efficiency, the truck made the run from Philadelphia to Baltimore, 107 miles, including all stops, in 7 hours and 38 minutes.

The patents on this truck are controlled and owned by the Chicago Pneumatic

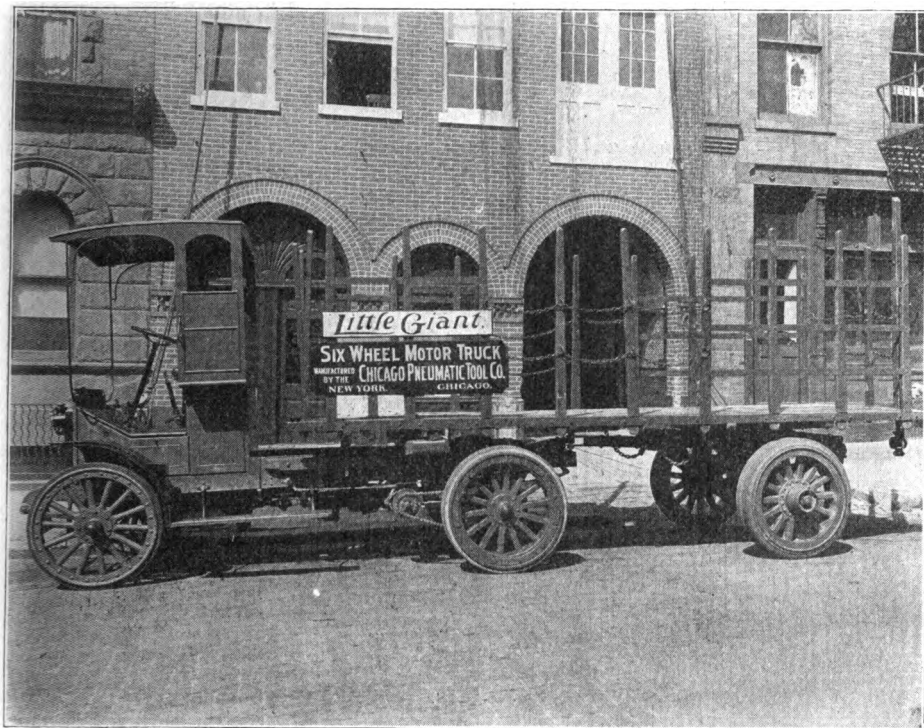
Tool Company, and it enables them to take a standard one-ton Little Giant Truck, equipped with the mechanism as shown on this six-wheel apparatus, and it automatically converts the one-ton truck into one of the three-ton capacity. Another feature of this truck is that it is pulled, not pushed. It will turn corners without interfering with other traffic in a way that no other long-wheel base truck can possibly do. Its entire action is automatic and requires no thought on the part of the driver save the usual handling of an ordinary truck.

### She Knew Better.

Passing a swimming school in a small city one day, two country women read this sign at the entrance:

• "25,000 Gals. in and Out Every Minute."

"That's all nonsense," said one of the women. "There ain't that many women in this whole town."



New Six-Wheel Little Giant Truck (Side View).

### The Three R's in Truck Transportation.

RADIS  
RUSH and  
RENT.

Compare a three-mile radius with one of 15 miles and remember the rule that circular areas are to each other as the squares of their radii. This means that the "sphere" of the average horse and wagon with three-mile radius is to that of the truck as 9 is to 225 or as 1 is to 25. In other words the advantage of the motor truck gives you access to 25 times more territory—get that!

In the rush season you wish your horse were made of steel and that he could work not only all day but half the night. You might even wish you could work him 24 hours a day, at times. But you haven't the heart and you daren't do it. It would kill the horse or cripple him, and you might have a fuss with the Hu-

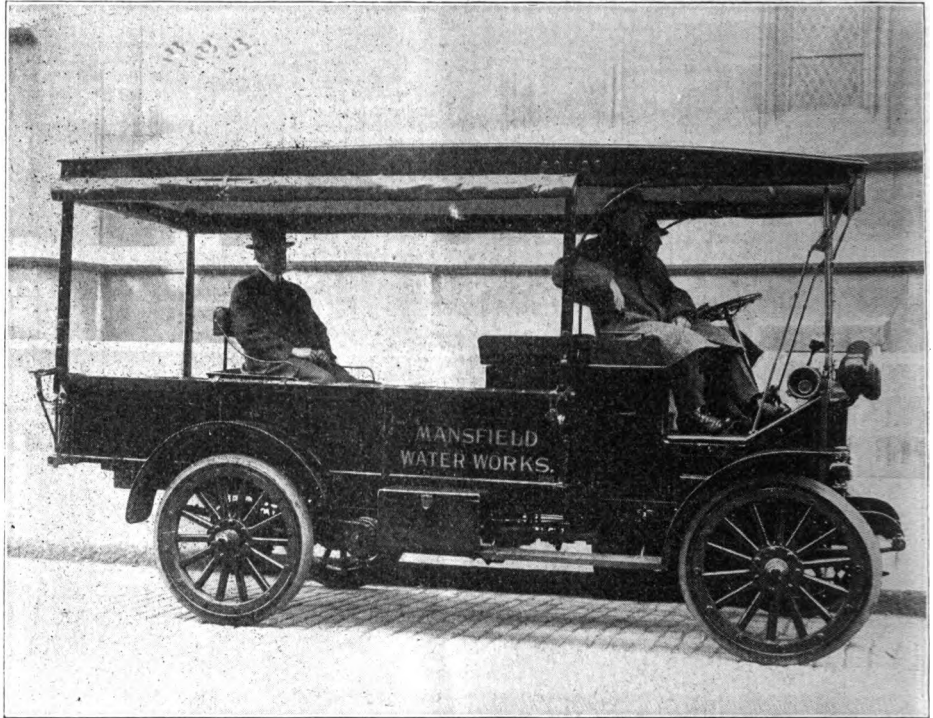
mane Society. With a truck you need have no such fears, for it has muscles of steel. It is **your** servant. The length of its day is in your hands. Give it gasoline and lubricating oil in the proper quantities and at the proper intervals and its day is 24 hours long—its endurance is limited only by the tensile strength of steel. Horse and wagons, barns, feed bins, etc., require twice the stabling space of motor trucks. And remember horses must be stabled near the store where rents are higher. The motor truck saves money by reducing the rent.

C. I. H.

"There were once two cats of Kilkenny,  
Each thought there was one cat too  
many;

So they scratched and they bit,  
They fought and they spit,  
'Till, excepting their nails  
And the tips of their tails,  
Instead of two cats there wan't any."





#### **Mansfield Buys a Little Giant.**

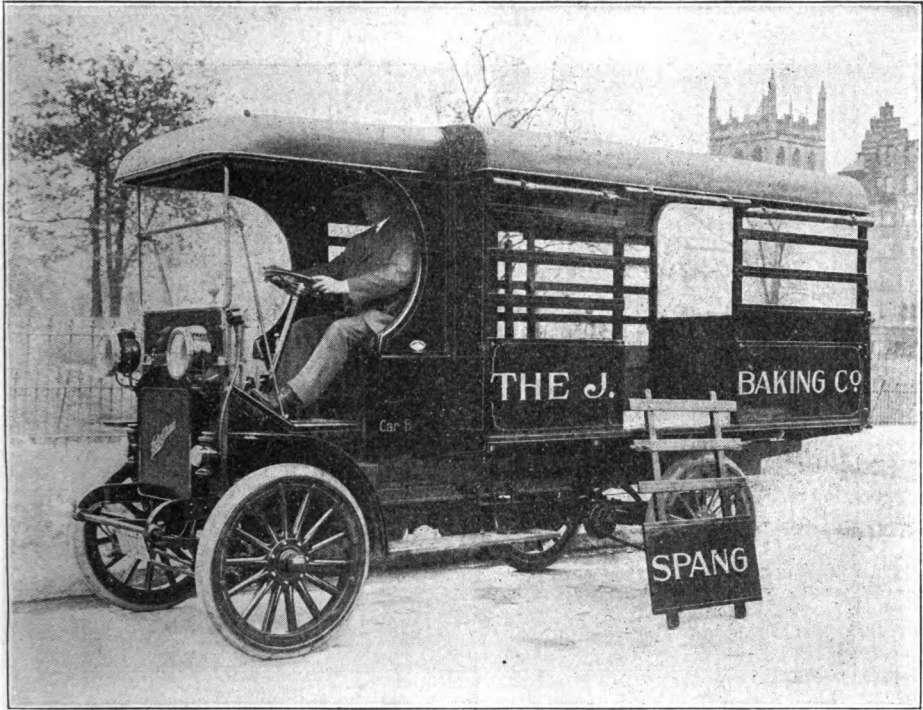
The above is a photograph of a Little Giant Truck sold to the Water Works Department, City of Mansfield, Ohio. The truck was bought on competitive bidding, fourteen different auto truck concerns competing for the business.

Mansfield is a very hilly town and the ease with which the Little Giant negotiated the hills was a determining factor in the tests made.

The car is equipped with auxiliary gas lights, a pipe vise and a full complement of pipe tools, a long length of hose, and



Garage of the Herring Buggy Co., Mansfield, O., agents for the Little Giant Truck.



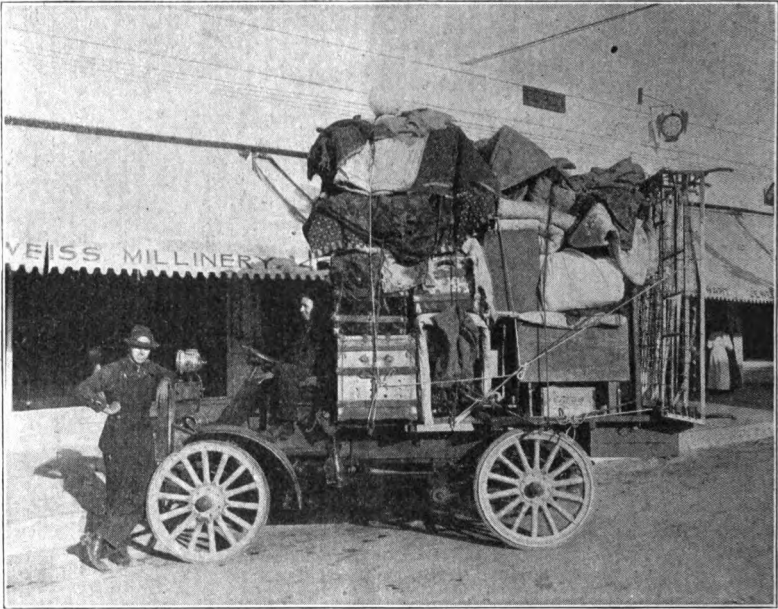
Little Giant Truck used by the J. Spang Baking Co., Cleveland O. (See article below).

in case of mains breaking at night is loaded with repair men and goes out like the engine of the fire department. Mr. McGinty, the Superintendent of Water Works, has gangs of men stationed at various points of the city, each of which he visits at intervals. If they have any pipe to cut they use the truck as a workbench and in this way it is estimated they do the work of about five single rigs, as heretofore they were compelled to send a wagon out, the same standing perhaps all day until they were ready to leave. Now they simply take out the entire gang, drop them off at various points in the city, visit them several times during the day and pick them up at night.

This truck was sold to the city of Mansfield by the Herring Buggy Company, who are the agents for Little Giant Trucks in Mansfield and Richland County, Ohio. A view of their garage is shown below.

#### Novel Use for a Little Giant.

The Little Giant truck, operated by the J. Spang Baking Co., Cleveland, Ohio, is put to very novel use. It is not used for distributing baked goods from house to house, but is used as a relief truck for the various single rigs scattered over the city; for instance, the wagons all start out from the bakery in the morning loaded with stuff that is hot. By noon they are all sold out, and perhaps when this occurs they are out ten miles from headquarters or point of supply. Then this truck is sent around at stipulated points on schedule to replace their supply. This saves the small wagons from coming away back, which would be an impossibility with horses. Where they previously made one trip a day, by using this supply wagon they can make three or even four, and correspondingly increase their profits.



Little Giant Truck "delivering the goods" for the Monrovia Transfer Co.

### Over Fifty Thousand Miles of Haulage With a Little Giant.

The Monrovia Transfer Company of Monrovia, Cal., have had a Little Giant Truck in service since October, 1912. In their letter of May 30, they write us as follows:

"I am glad to give you all the data I have about my Model "D" Little Giant, which I have had in constant service since October 12th, 1912, in the general transfer business, and I also deliver all the goods received at this place by Wells Fargo & Co.

"I am and always was a Little Giant Booster for the reason that I have covered 53,250 miles since I have had it and have overloaded it most of the time. The photo I am sending you is a fair sample of a household moving job and weighs 3,250 pounds. I do not recommend overloading trucks, but in work of this kind you have to take the entire lot or make two trips, which would not be profitable.

"I can cheerfully recommend the Little Giant to prospective buyers, as I have found it reliable and always on the job."

### "Matters of Interest."

Tennyson or Longfellow could take a worthless piece of paper, write a poem on it, and make it worth \$60,000.00—That's Genius.

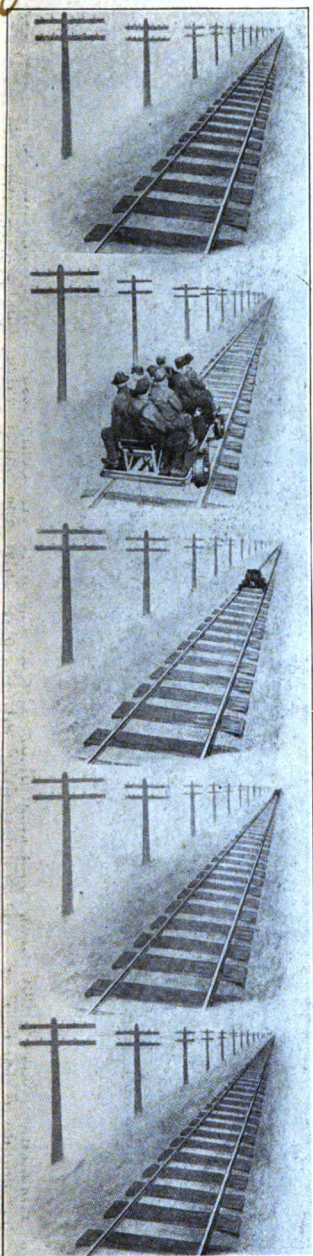
Rockefeller or Carnegie can write a few words on a sheet of paper and make it worth millions of dollars—That's Capital.

The United States can take an ounce and a quarter of gold and stamp upon it the American Eagle, and it is worth \$20.00—That's Money.

A Mechanic can take material worth \$5.00 and make it into watch springs worth \$1,000.00—That's Skill.

A man can earn a thousand dollars and put it in his pocket and lose it, or in his trunk and a thief steal it; or lend it to a private individual and never get it back—That's Foolish.

But, when a merchant draws sufficient funds out of his bank account and buys a "Little Giant Truck"—That's Wisdom.



## Moving Pictures Tell the Story of the "Rockford"

Here you see a No. 4 ROCKFORD MOTOR CAR with a load of eight men with their picks, shovels, and other tools required for section work.

They are on their way, going at the rate of twenty miles per hour. They are in a hurry, and every moment they save in getting to their work is a saving of dollars to the railroad company.

The speed with which the ROCKFORD MOTOR CAR brings them to the job is an inspiration to get to work quickly, and do their work diligently. They become conscious of a certain dignity, and work harder and with more snap and "ginger" than they possibly could after pumping a handcar for several miles. But you see how they are skimming along. The ROCKFORD has a way of "getting there."

It's the ROCKFORD engine that makes it possible for the ROCKFORD MOTOR CAR to cover ground so rapidly, and SPEED, in these days of hustle and rush, is a factor that can not be ignored. It is by your SPEED you will be judged when the annihilation of space is your object.

And the ROCKFORD MOTOR CAR has speed; for see how it is rapidly disappearing in the distance.

When the virtues of the ROCKFORD MOTOR CAR are considered, the car itself is more eloquent than we could ever hope to be, and it is with the car itself that we would like to have you acquainted.

But twenty miles an hour is no snail's pace, and the ROCKFORD MOTOR CAR has disappeared from view.

*Have you Catalog 43? Ask for it.*

### Chicago Pneumatic Tool Co.

1014 Fisher Bldg.

52 Vanderbilt Ave.

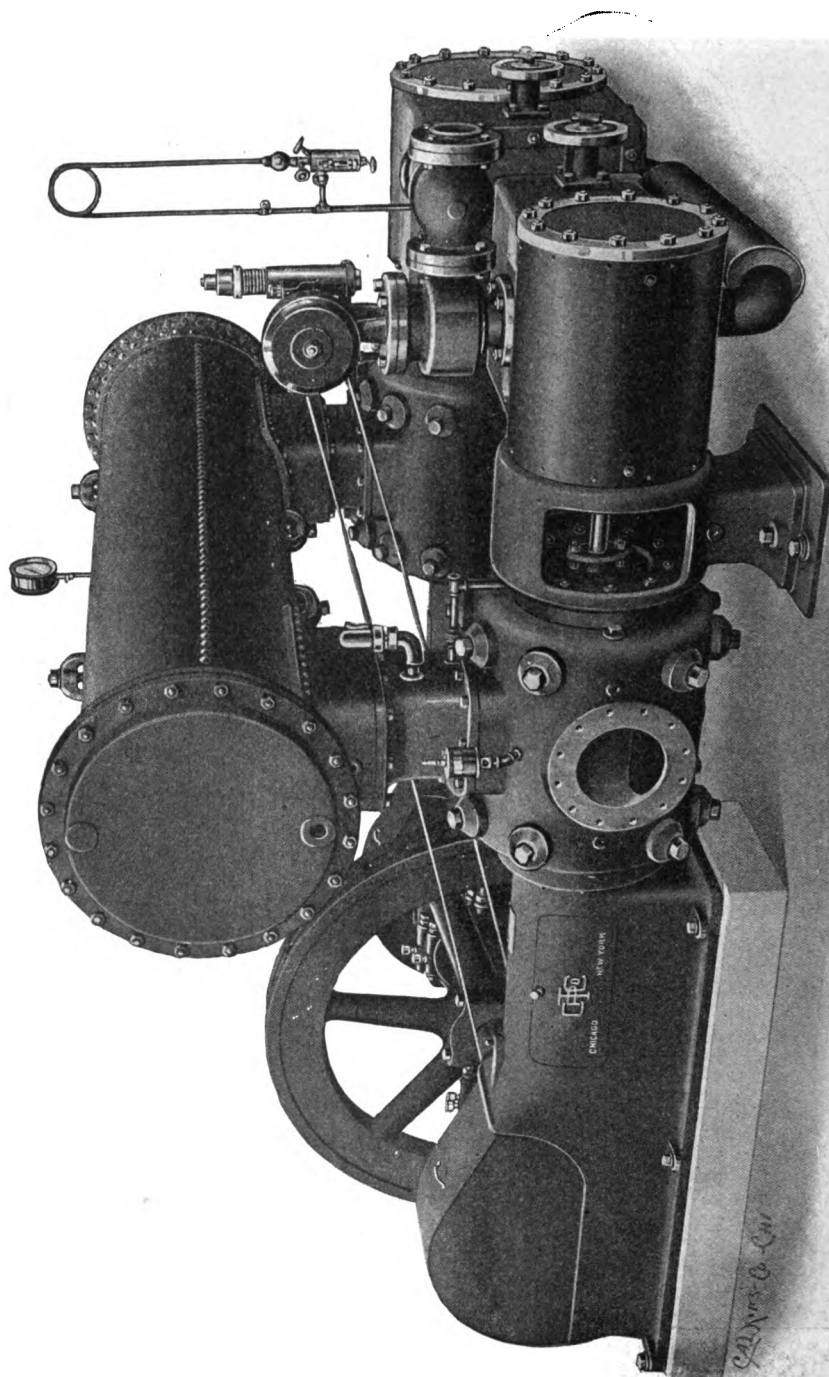
CHICAGO

NEW YORK

**Branches Everywhere**

When writing to advertisers please mention Ideal Power.





"Chicago Pneumatic" Class O-CSC Cross Compound Steam Driven Two Stage Air Compressor, built in capacities up to 1,557 cubic feet of free air per minute at 180 R. P. M. Air cylinders fitted with Simplate inlet and outlet valves, and representing the most advanced design in enclosed type, self-oiling automatically regulated air compressors for general use. Ask for Bulletin 34 M.

**Co-Operative Night School.**

Editor "Ideal Power":

The attached article, entitled "Co-operative Night School," appeared recently in the "American Machinist," and perhaps it will interest you, showing as it does, the harmony existing between the Chicago Pneumatic Tool Company and its employees. Here is a typical example of men having confidence in themselves and in their employers. The co-operative night school idea could be used to advantage in many organizations, and I feel sure that other firms would, like the Chicago Pneumatic Tool Company, assist in every way possible to improve the education of their employees, because the interest of employer and employe is a common one, and co-operation is the key-note of efficiency.

In this age of efficiency and keen competition the firm employing the highest grade of skilled labor and equipment is the firm that succeeds, and the mechanic who has sufficient initiative to improve himself by education and observation will surely carry the heaviest pay envelope.

(Signed) M. E. GRIFFIN,  
Franklin, Pa.

This is the article referred to:

**Co-operative Night School.**

It is frequently said that night schools are a failure because of the lack of interest on the part of mechanics in such opportunities for education. This seems to be disproved by a somewhat original plan followed by the employes of the air-compressor plant of the Chicago Pneumatic Tool Company, Franklin, Pa.

About a year ago, a few of the mechanics, desiring some form of school or means of educating themselves, called a meeting of all employes interested to decide on a mode of procedure. The result was that they decided to assemble for study at least one night a week. On consulting the management regarding the scheme, they were greatly encouraged, the firm offering assistance, not

only in furnishing a free study room, but also in many other ways. A night school was therefore established which has since proved of inestimable value to all concerned.

From October until May, one night of each week is "school night." Mechanics, foremen, draftsmen, engineers and managers meet together. No fees are necessary, as some of the engineering staff find pleasure in teaching.

The first part of each school night is devoted to instruction in mathematics and its application to modern shop practice; the second part is devoted to answering the questions asked on the preceding night. During the intervening week these questions have been posted in a conspicuous place in the shops as a reminder of what is expected at the meeting following. In asking or answering any question, each man does his part, the blueprint boy having the same privilege as the superintendent or manager.

The following set of questions, which were asked one night and discussed the following, shows how intensely interesting and educational this co-operative school is:

1. How deep should piston-rod stuffing-boxes be made for steam and air ends of compressors?
2. Would a spiral tap be of any advantage in crossheads where a rod is secured to the crosshead?
3. What kind and form of lubrication would you recommend for air-compressor cylinders?
4. What is good cutting speed and amount of surface finished in square inches per minute for cast iron and steel?
5. Explain how to fit a taper-end piston rod in a cast iron or a cast steel piston?

Taken altogether, we consider the co-operative night school a success.

M. E. GRIFFIN.

Franklin, Pa.



Many a patent leather shoe hides an aching corn.

Uneasy lies the head that wears a crown—of false hair.

If it wasn't for men, fewer women would dislike each other.

The demand for sincerity is far in excess of the visible supply.

And man is also the architect of most of his own misfortunes.

A man seldom knows what he doesn't want until after he acquires it.

Whom the gods would destroy they first induce to marry foolishly.

Coquettes are like weather vanes—only fixed when they become rusty.

Instead of calling a doctor, the self-made chap should send for a repairman.

A woman is always telling her husband that a man doesn't know what it is to be sick.

By ordering spring lamb in a poor restaurant you realize how tough it is to die young.

But a man never realizes what fool ideas he has until after he builds a house according to his own plans.

Will the suffragette have to acquire the big black cigar habit before she can make good as a political boss?

Many a man who is brave enough to beard a lion in his den may be shy when it comes to facing the cook in her kitchen.

Worry knocks more men out than overwork.

Cheer up, girls! Leap year is only eight months away.

Between two evils some men always pick the wrong one.

Always try to favor your friends. You can use a few more.

Time softens all things—except a railway restaurant sandwich.

The shorter a young man is on brains the longer he is on collars.

Appearances indicate that the average man doesn't get much beauty sleep.

Many a man who acts on the square during the day is a rounder at night.

What has become of the old fashioned woman who took snuff for weak eyes?

If some people would take the trouble to conceal what they think they would be more popular.

An Ohio hen recently hatched ten chicks from nine eggs. She doesn't belong to the poultry union.

It's usually too late for congratulations when the happy couple have been married more than a week.

The man who chews fine cut tobacco considers himself higher up in the social scale than the man who chews plug.

"Keep a thing for seven years and you'll find some use for it," says an old proverb. That is one reason why we are still keeping our appendix.

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# IDEAL POWER

Published Monthly in the Interest of Motor Trucks and Compressed Air and Electrical Appliances  
By THE IDEAL POWER PUBLISHING COMPANY  
Fisher Building, Chicago

VOL. 11

JULY, 1915

No. 7

## The "Simplate" Valve—Its Construction and Operation

During the past decade, a number of designs of flat plate Compressor Valves have been presented and discarded because of inefficiency and impracticability. These designs were all remarkably similar, varying only in minor details.

The "Simplate," unlike any and all other valves is unique and distinctive in both design and construction. Its chief advantages are that it is simple; that its plates are independent in action, one of another; that each plate has its individual springs; that the tension of the spring on the inlet and discharge valves differs according to the density of the air handled; and lastly that it is applicable to all positions and conditions.

In figure No. 1 we show a discharge valve. The valve seat (A) is cast from a special composition possessing toughness and high tensile strength, and it also has circular ports as shown in the figure. It is machined so that the raised portion of the seat, or the points on which the plates rest forming the joint, is very narrow, thus reducing the unbalanced area to a minimum.

The keeper (B) is of the same material and is provided with suitable ports for the free passage of air through it. It also furnishes the guides for the valve plates, and affords, as well, satisfactory pockets for the valve springs.

The valves (C) are simple concentric steel plates of uniform section, with a separate and independent plate over each port. Each plate is also independently governed by its own springs, hence the action or opening of each valve is entirely independent of the other. Should one of the plates open, the one next to it does not necessarily need to move, unless the speed conditions should demand it. Here we see the great advantage of having the plates independent of one another, rather than for the series of plates to be made from one sheet with openings cut through to allow the air to flow from the different ports.

The springs (D) are of the Volute type and are made of special alloy steel, heat treated and carefully tempered. They have the proper tension for the discharge and inlet valves, so as to effect the most perfect valve action. The parts making up a complete valve are assembled and held together by the nickel steel stud (E) and castle nut (F), and when this nut is securely tightened in place, it is firmly held so by cotter pin (H).

Figure No. 2 shows the inlet valve, the construction of which, as can be seen, is very similar to that of the discharge valve. It differs only in the following respects: The valve stud enters through the keeper instead of through the seat,

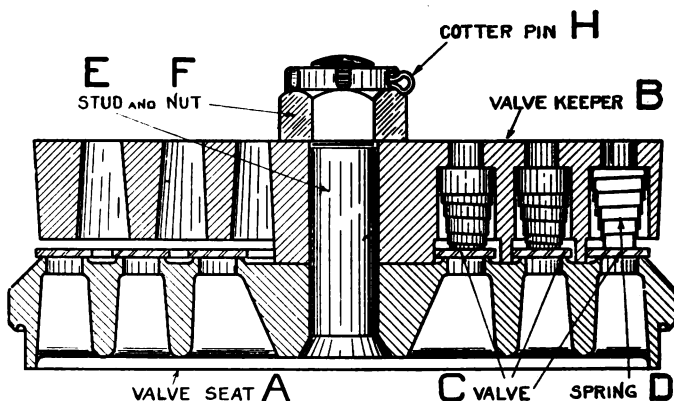


Fig. 1—Simplat Discharge Valve.

as does the discharge; the keeper is thinner; and the springs are of lighter tension. On account of the difference in the thickness of these valves, they cannot be reversed; that is, the inlet cannot be put in where the discharge should be, nor the discharge where the inlet belongs—this precautionary measure we deem to be highly necessary. We make the spring tension on the inlet valves very light so as to get the full benefit of the varied opening of the different plates when the piston speed is changed. For instance, with an inlet valve of the size here shown, the spring tension is so calibrated that the outer plate opens with a pressure of but  $\frac{1}{4}$  ounce per square inch, and one ounce will open the intermediate plate, while it requires  $2\frac{1}{2}$  ounces to open the inner one. This illustrates the true meaning of the varied opening.

"Simplat" valves are efficient in the highest degree because, they are light and durable; always remain tight, are opened with little work; and are noiseless in operation. They have suitable spring tensions inasmuch as the inlet and the discharge spring tensions differ according to the difference in the density of the air handled; their opening is varied in proportion to the increase or decrease in the piston speed; their location in the cylinder is convenient for examinations or repairs, and allows the air to enter the cylinder through cool and unrestricted passages; and finally, as can be seen from the indicator cards in figures No. 3 and No. 4, the power required to expel the air from a cylinder equipped with "Simplat" valves is a minimum.

"Simplat" valves are remarkably simple, since they have independent plates

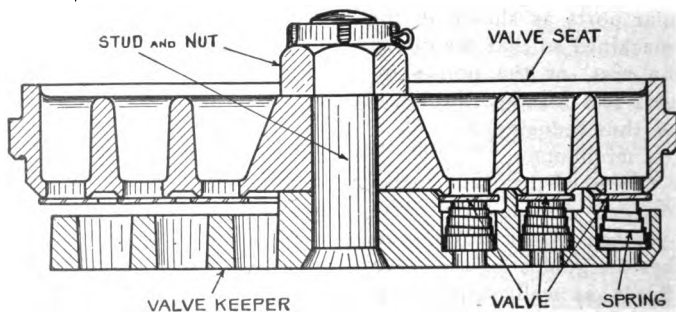


Fig. 2—Simplat Inlet Valve.

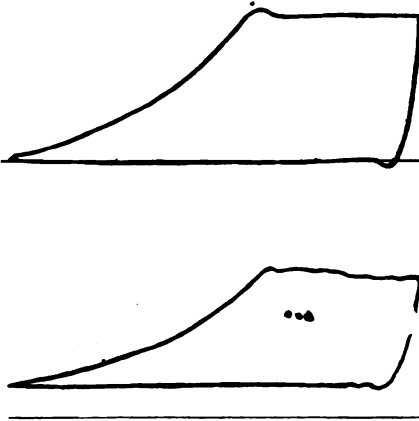


Fig. 3—Indicator Card from Two Stage Compressor

and springs, and a varied opening, according to speed. At low speed one plate acts—at high speed all operate, hence the action is ideal under all speed conditions.

These valves are silent in operation at all speeds, resulting in little wear and long life; they are equally suited to high and low pressure; and the cost for repairs is reduced to a minimum. They

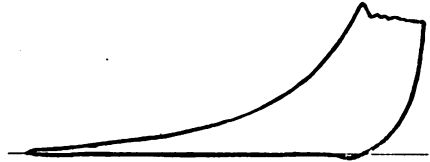


Fig. 4—Indicator Card from Single Stage Compressor

insure higher mechanical and volumetric efficiencies than the old style poppet valves; they insure continuous operation under the severest conditions; and the air compressing cylinders are simplified, due to the absence of all intricate valve operating mechanism. The valves require no lubrication; the compressor floor

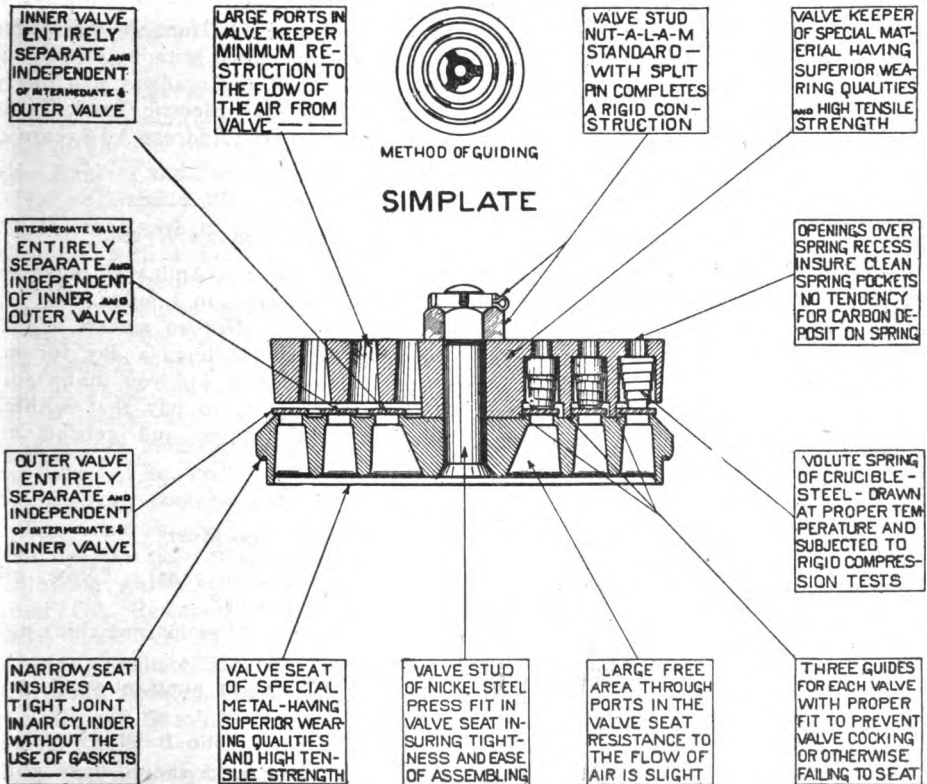


Fig. 5—Advantageous Features of Simplate Valves.

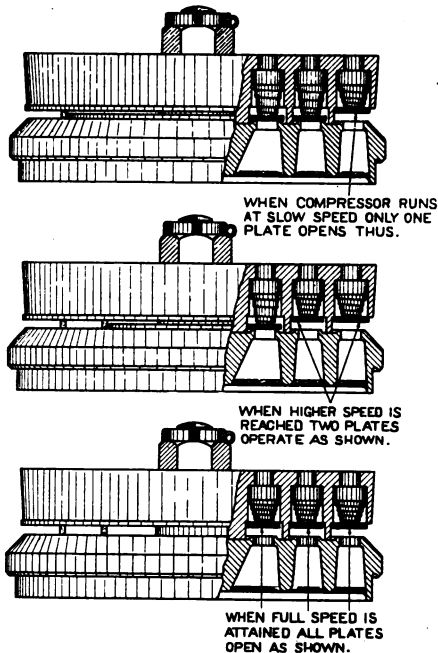


Fig. 6—Showing operation of Simplate Valve at increasing speeds.

space and cost of installation are lessened because of the possibility of getting a greater capacity from a given machine when operated at high speed; and lastly, the valve parts, as well as all other parts entering into the complete unit, are perfectly interchangeable.

#### Treatment of Material and Guarantee.

All "Simplat" Valve plates are made of a special alloy steel, heat treated, oil tempered, straightened perfectly and ground true on one side only. All valve plates are also rigidly inspected before assembling. Valve springs are made of high grade crucible steel, drawn at the proper temperature, and put through a series of rigid compression tests.

All parts entering into the construction of "Simplat" valves are of the highest quality and workmanship, and the Chicago Pneumatic Tool Company guarantees to repair or replace free of charge, any part which is found to be defective in workmanship or material within a period of one year after date of shipment.

#### These Men Want Jobs.

A foreman boiler maker with long and creditable experience, with thorough knowledge of pneumatic tools and with best of references, wants position with some railroad. Address Ad-4, care Ideal Power.

A superintendent of steel construction, with twenty-two years' experience, wants to connect up with some reliable concern. Can furnish best of references. Address Ad-5, care Ideal Power.

A pneumatic tool man with nine years' experience in one of the largest railroad shops of the country wishes to locate in the northwest. Address Ad-7, care Ideal Power.

Practical engineer would like to connect with some large electric railway in the capacity of superintendent of machinery or as roadmaster. Has had seven years' practical experience with some of the largest electric railways in the West and can furnish references. Has had experience with practically all makes of track and roadway machinery, including Duntley Electric Track Tools. Can handle men. Address Ad-8, care of Ideal Power.

#### His Money's Worth.

Scotch Father: "And you must ha' seen a lot of sights in London, eh?"

Scotch Son: "Not so muckle. They charged me six shillings a day for my room at the hotel, and you dinna suppose I was going to pay that without staying in the room and getting my money's worth?"

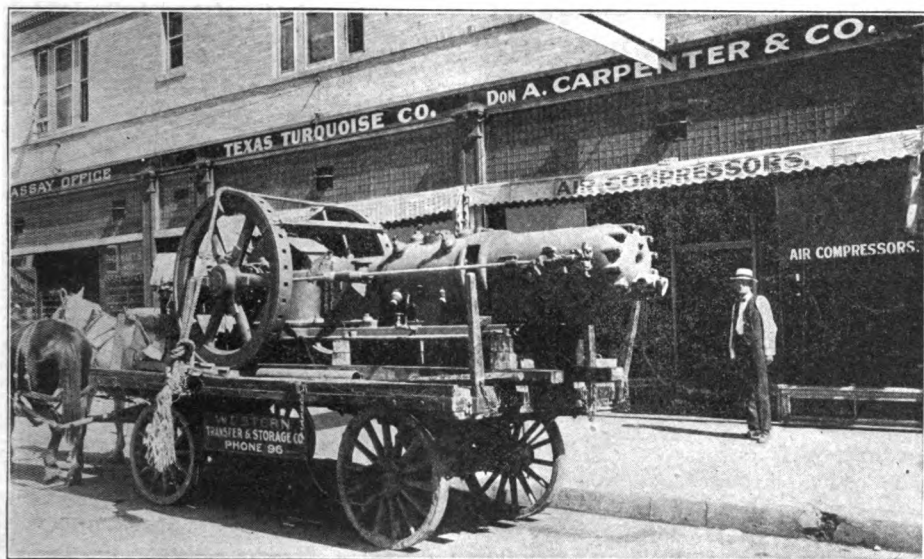
#### Too Much.

P. C. (to festive gent): "Now, sir, what's the trouble?"

Festive Gent: "I've lost me (hic) umbrella."

P. C.: "Why, it's hung on your arm, sir."

Festive Gent: "Sho it ish (hic). If you hadn't told me I should have gone (hic) home without it."



"Chicago Pneumatic" Class N-S O Fuel Oil Compressor leaving store of Don A. Carpenter & Co., El Paso, for nearby ranch where it is to be used for pumping water. Don A. Carpenter & Co. are Southwestern Agents for the Chicago Pneumatic Tool Co.

### To Machinery Dealers and Supply Houses

We want agents and dealers to represent us in territory still open for the sale of our line of "Giant" Fuel Oil and Gas Engines and Compressors, and have a very attractive offer to make reliable houses that wish to make business connections with a \$11,000,000.00 corporation with a record of more than twenty years of business success to its credit.

"Giant" Fuel Oil and Gas Engines are made in four prime sizes, 12, 18, 25 and 45 horse power, and the 25 and 45 H. P. sizes may be supplied duplex, thus giving units up to 90 horsepower capacity. The single units are truck mounted for portable use when desired.

The Giant Fuel Oil and Gas engine will operate successfully on any of the following grades of fuel: Crude Oil, Fuel Oil, Residuum, Stove Oil, Star Oils, Tops, Tar Oil, Solar Oil, Gas Oil, Engine Distillate, Holder Oil, Coal Oil, Kerosene, Alcohol, Motor Spirits, Naphtha, Benzol, Gasoline, Natural Gas, Producer Gas.

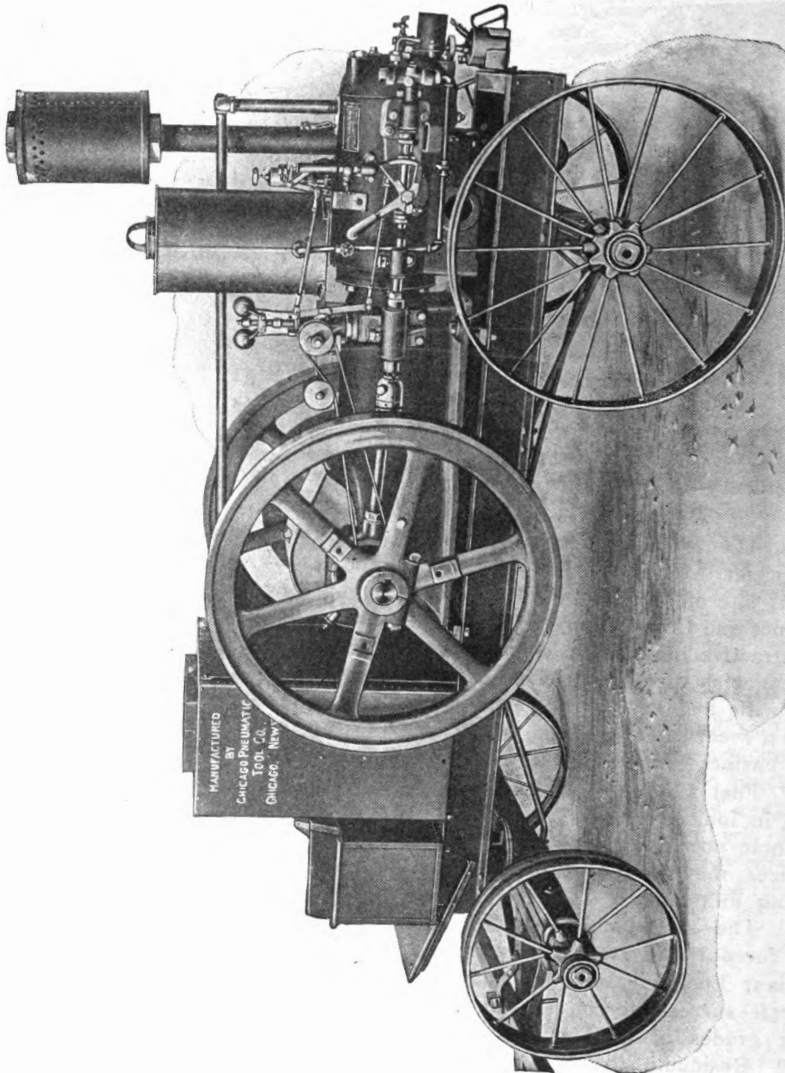
It has no valves, gears, carburetors, mixers, oil or air heaters, magnetos,

batteries, timers, switches, coils, wires or spark plugs.

The employment of a single cylinder minimizes working parts and their consequent friction. The crosshead construction is extremely important, providing features of advantage over the trunk piston type that cannot and must not be ignored. The crosshead removes from the piston head the angular thrust of the connecting rod with its tendency to wear the top and bottom of the cylinders more than the sides, with the result that oils of a heavy or asphaltum base will work back and under the piston rings, hardening there and causing excessive cylinder wear.

With the crosshead type all bearings are accessible and by compressing in the front end of the cylinder instead of in the crank case, better compression is secured, there being no joints to offer opportunity for leakage and the compression space is greatly reduced. Lubricating oil from the crank case cannot possibly enter the combustion chamber and disturb regulation.

In design the Giant Engine is the simplest on the market, and its lack of



"Giant" Class A-O Portable Fuel Oil Engine

complicated parts and mechanisms recommends it for use in isolated localities, where breakdowns are fraught with serious consequences.

Agents with whom we make connections will be furnished with Bulletins and Salesmen's Catechisms dwelling on the superior merits of the "Giant" engine, explaining thoroughly in the form of questions and answers, all the details of construction and operation, and setting forth very clearly, relative values of the various grades of crude oil, comparative costs of operation, etc.

Our own sales representatives, attached to our branch offices throughout the country, are available to furnish information and assist dealers in effecting sales.

Our "Chicago Pneumatic" Compressors, our Boyer Hammers and Little Giant Drills, our Duntley Electric tools and Little Giant trucks are known throughout the world and we want live agents to introduce our lines of "Giant" Fuel Oil and Gas Engines and Compressors, in localities where we are not yet represented.

Correspond with us. This is a real opportunity.

Compressor and Engine Department,  
Chicago Pneumatic Tool Company,  
1014 Fisher Bldg., Chicago, Ill.

### DO YOU EVER DO ANY CIRCULARIZING?

If you do, send us \$3.00 for a complete directory of the boiler, tank and stack manufacturers of the United States and Canada. The list is up to date and is authorized by the American Boiler Manufacturers' Association of the United States and Canada.—Editor.

A young lady about to be married received from a chum as a wedding gift a broom with a tag carrying this message:

"For this, thy happy wedding day,  
A broom I thee will send.  
In sunshine use the lower part,  
In storm, the other end."

### Two Letters That Tell One Story.

Salt Lake City, Utah, Apr. 23, 1915  
Mr. W. P. Pressinger,  
Care Chicago Pneumatic Tool Co.,  
New York, N. Y.

Dear Mr. Pressinger:

Enclosed please find a testimonial letter from the Chief Consolidated Mining Company of Eureka, Utah. The compressor spoken of is a 12 x 7½ x 12 type "N-SO" Skid Mounted, and was purchased of us on Nov. 11th, 1914.

We yesterday had the pleasure of selling these people a repeat order, they ordering of us a tank mounted type "N-SO" 115 foot machine.

If you care to take a reproduction of this testimonial letter do so, but kindly return the original to us as soon as you are through with it.

We have the pleasure to remain

Yours very truly,

F. C. RICHMOND MACHINERY CO.

(Signed) F. C. Richmond,

Pres.

Eureka, Utah, April 20, 1915.

F. C. Richmond Machinery Co.,  
Salt Lake City, Utah.

Gentlemen:

In regard to your new Oil Driven Air Compressor which we recently purchased and is now in operation at the Scotia Mine, I wish to state that it has given us entire satisfaction both as to its mechanical and economical properties. We find that it consumes 30 gallons of 30 degree distillate per 24 hours working two eight hour shifts. It handles at present a small hoist on surface, two small hoists underground, two hammers and a stoper. Hereafter we will use these Oil Compressors for all our prospects for it proves to be more efficient than any power in this camp.

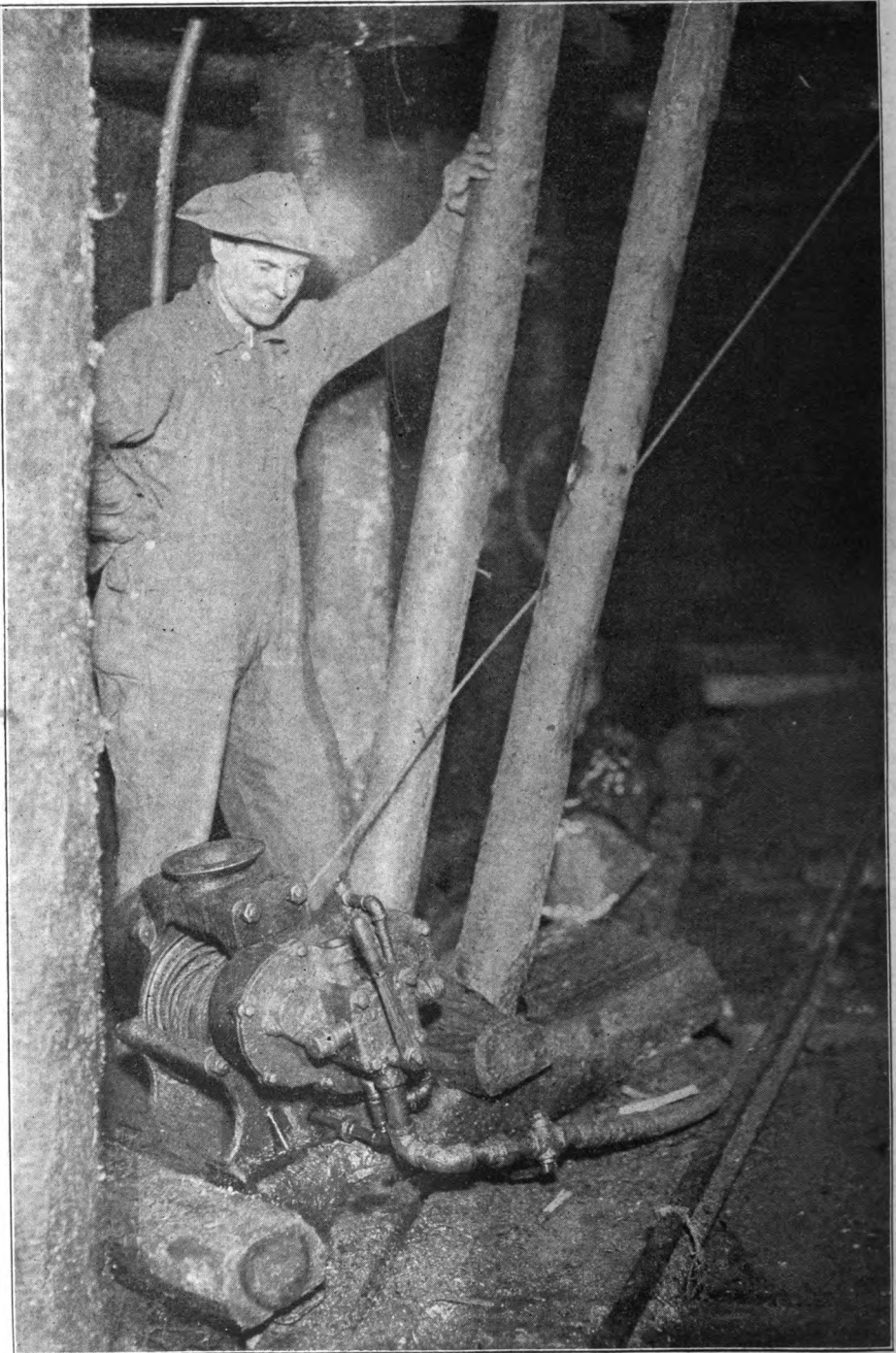
Yours very truly,

C. Fitch, Sup't.

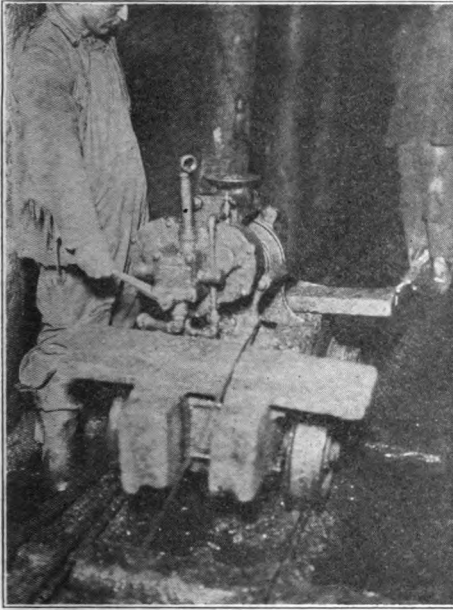
Chief Consolidated Mining Co.

Cheerful old lady—"Well, dominie, the new churchyard's fillin' up real nicely, ain't it?"—Puck.

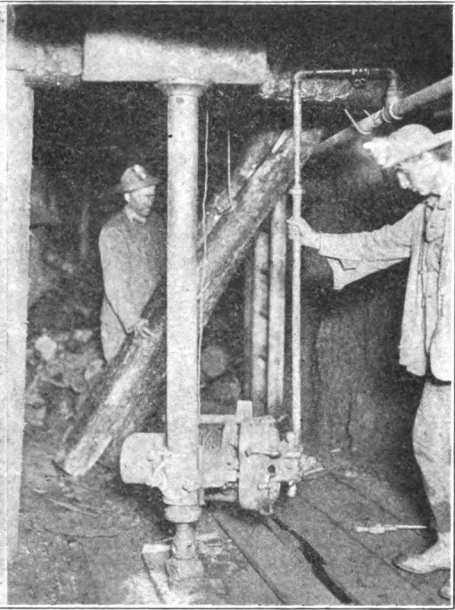




Chicago Portable Mine Hoist "studded" on level for hoisting through mine,  
at Forbes Mine, Iron River, Mich.



Chicago Portable Mine Hoist mounted on truck to work at different points on level, at Zimmerman Mine, Spring Valley Ore Co., Gastraa, Mich.



Chicago Portable Mine Hoist mounted on column hoisting timber from main level to intermediate levels above, Caspian Mine, Iron River, Mich.

### The Hoisting Problem in Mines and Construction Work.

The Portable Mine Hoist, while designed especially for use in mines, has a very wide range of usefulness in construction and contracting work of all kinds. In mining work it solves the problem of economically raising and lowering timber and rock in raises, winzes and stopes. It will haul cars in drifts and tunnels and lower Rock Drills, mountings and drill steel from level to level. In construction work it is a general utility device, raising and lowering machinery and materials quickly and safely, and can be set up or torn down in a few minutes.

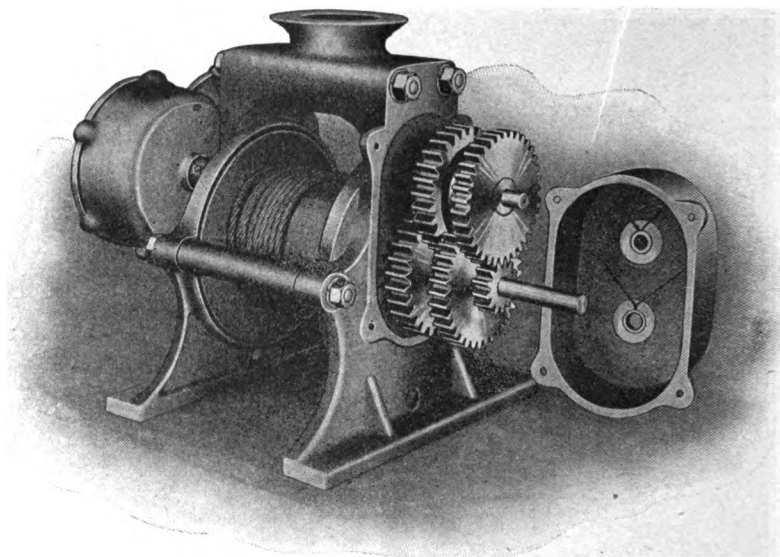
The Chicago Portable Mine Hoist is equipped with an inverted cone similar to that found on rock drill shells, which permits it to be mounted on a  $4\frac{1}{2}$  inch double screw column, just as a rock drill is mounted. When bolted to a timber it may be used as a stationary hoist or

it can be bolted to a truck and moved from place to place as needed. All the working parts are enclosed and it will stand lots of abuse.

When used intelligently it will be found useful for an endless number of purposes and will pay for itself in a short time. Its bulk is small, and it can be so placed that it is out of everybody's way whether set up in drive, stope or shaft.

The Chicago Portable Mine Hoist operates by a Reversible Two-Cylinder Pneumatic Motor through a chain of gears cut from solid steel and hardened. This gearing is so designed that a brake is unnecessary. It instantly and positively locks, whether in raising or lowering the load, the moment the motor stops, and it is impossible for the load to slip even though the air is cut off for a whole day. A brake could not be more positive.

The Chicago Portable Mine Hoist will



Enclosed Gearing of Chicago Portable Mine Hoist

coil 200 feet of  $\frac{1}{8}$  inch wire rope and hoist 650 pounds at a rope speed of 90 feet per minute. This we guarantee it to do with 80 pounds air pressure, but as a matter of fact we test each one with much heavier loads. It will be noted in this connection that the Hoist is so designed that the rope cannot possibly run off the drum, which is a most desirable feature from an operator's point of view.

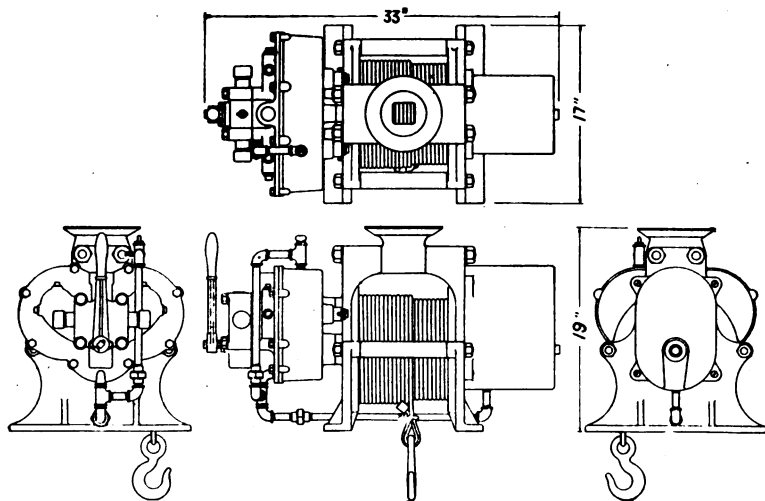
It will be noted that the gears are incased in a closed box, which not only protects the teeth but also insures the careless operator against personal injury and permits of the Automatic Lubrication with which the Hoist is provided.

The motor consists of Two Double Acting Oscillating Cylinders set at right angles in a closed case. There is no movable valve mechanism, as the oscillation of the cylinders opens and closes the ports. A quantity of oil is kept in the case, so that the crank in revolving lubricates itself and dashes the oil on the cylinder seats, from which the air carries it through the inlet ports in sufficient quantities to thoroughly lubricate the pistons.

The air is controlled by a slide valve, which closes when in the central position and starts or reverses the Motor as it may be thrown to the right or left. The valve is thrown by a lever. When this lever is released by the operator the valve is self-closing. This automatic action of the valve positively eliminates all danger of the Hoist creeping and doing damage due to a slight displacement of the valve, since it is necessary to hold the valve open in order to admit any air to the cylinder.

The cylinders are bored true, and automatically adjustable to their valve-seats, the adjustment being simple and made from the outside of the motor case. The piston rods are ground. The stuffing boxes are ample and contain sufficient packing for long wear. All bearings are bronze bushed. The material used throughout is the best obtainable. Superior workmanship is in evidence.

The oiling system on the Chicago Portable Mine Hoist is of exceptional merit. It is automatic and continuous so long as the Hoist is in operation. The oil passes from the motor casing through the bearings to the gear box, from which point it is returned again to



Outline Drawing of Chicago Portable Mine Hoist

the motor-casing. There is no waste and yet every part is most thoroughly lubricated.

Then, too, being of the double-cylinder type, with cranks set at 90°, the Chicago

Portable Mine Hoist has no dead center and therefore cannot be stalled. It responds instantly the moment air is admitted to the Motor to either raise or lower the load.

#### Specifications of Chicago Portable Mine Hoist

Type of Hoist	- - - - -	Double Cylinder.
Diameter of Cylinders	- - - - -	2½ inches.
Length of Stroke	- - - - -	2¼ inches.
Horse Power	- - - - -	2 H. P.
Free air used per foot of lift at sea level	- - - - -	1 cubic foot.
Air Inlet	- - - - -	1 inch.
Weight lifted vertically with 80 lbs. air pressure	- - - - -	650 pounds.
Rope speed per minute with full load	- - - - -	90 feet.
Diameter of rope recommended	- - - - -	⅝ inch.
Quantity of ⅝" rope drum with coil	- - - - -	200 feet.
Net weight of Hoist without wire rope	- - - - -	300 pounds.
Over all dimensions—Length	- - - - -	33 inches.
Width	- - - - -	17 inches.
Height	- - - - -	19 inches.
Ratio of gearing	- - - - -	17 to 1.
Drum diameter and width	- - - - -	6x8 inches.
Depth of flange	- - - - -	2⅝ inches.
With 200 feet ⅝" wire rope	- - - - -	
Code word	- - - - -	Acerta.
With 200 feet ⅝" wire rope and a 4½"x6' double screw column	- - - - -	
with arm and clamp	- - - - -	
Code word	- - - - -	Acervix.

Prices on application. Send for Bulletin 149.

# Duntley Electric Drills and Grinders

## Universal Electric Drills

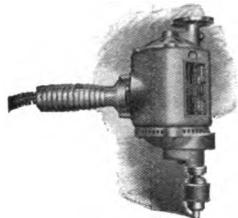
Patented Feb. 18, 1913.

For connection to ordinary lamp socket.

Operating on either direct or alternating current (of 60 cycles or less) single phase, interchangeably.

Cut shows the smallest and lightest electric drill built which will operate on either current. We build seven sizes of drills of this type as follows:

Size No.	Capacity in metal	inch
000.	"	$\frac{1}{4}$ "
000x.	"	$\frac{1}{8}$ "
00.	"	$\frac{1}{8}$ "
0.	"	$\frac{1}{8}$ "
1.	"	$\frac{1}{4}$ "
2.	"	$\frac{3}{8}$ "
3.	"	$1\frac{1}{4}$ "



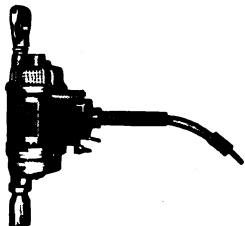
Size No. 000.  
Capacity  $\frac{1}{4}$  inch in metal

## Heavy Duty Direct Current Electric Drills

For 110 and 220 volts.

Built in five sizes as follows:

Size No.	Capacity in metal	inch
0.	"	$\frac{3}{8}$ "
1.	"	$\frac{1}{2}$ "
2.	"	$\frac{3}{4}$ "
3.	"	$1\frac{1}{4}$ "
3x.	"	$1\frac{1}{4}$ "
4. (Comp.)	"	$1\frac{1}{4}$ "
4x.	"	$2\frac{1}{2}$ "
5. (Comp.)	"	$2\frac{1}{2}$ "



Size No. 0 S-S

The No. 3, 4 and 4x can be furnished in the center spindle as well as the side spindle style.

The No. 3x, 4 Compensated, 4x and 5 Compensated are especially adapted for high speed reaming.

## Heavy Duty Alternating Current Electric Drills

For two and three phase.

For connecting to two or three phase power lines. Cannot be operated from lamp socket. Built in five sizes as follows:

Furnished in the side spindle style only. Standard windings are for 60 cycles, 110 or 220 volts. Size Nos. 2, 3 and 4 can be wound for 440 volts.

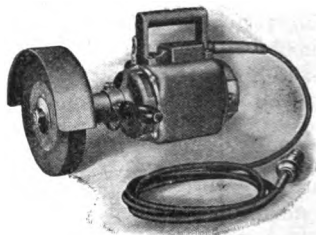
Size No.	Capacity in metal	inch
0.	"	$\frac{3}{8}$ "
1.	"	$\frac{1}{2}$ "
2.	"	$\frac{3}{4}$ "
3.	"	$1\frac{1}{4}$ "
4.	"	$2\frac{1}{2}$ "

## Electric Grinders

For use in the foundry, machine and structural shop. Built in two sizes for 110-220-600 volts direct current, and 110-220 volts two or three phase alternating current.

Size No. 5 BP carries 5x $\frac{3}{4}$  inch wheel  
" " 8 BP " 6x1 $\frac{1}{4}$  " "

Universal Grinders can be furnished in three sizes to operate on either direct current or alternating current, interchangeably from an ordinary lamp socket.



Size No. 8 BP Portable Grinder

## CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Building, CHICAGO

Branches Everywhere

52 Vanderbilt Ave., NEW YORK

### Care of Duntley Electric Drills.

It is of vital importance to have portable drills in first-class operating condition at all times and this can be accomplished by the exercise of a little care and attention on the part of the operators. When the customer's plant is provided with a toolroom, it is desirable to have the tools sent there occasionally to be looked over and if necessary put in the best possible condition.

It is to be expected that natural wear of the bearings and brushes will take place; therefore, these points should occasionally be looked after.

In order to assist in the care of electric drills the following suggestions may be of benefit:

**Lubrication:** The gears of Duntley electric drills are intended to run in grease and an opening in the gear case is provided for the insertion of grease. We recommend the application of two or three tablespoonfuls of high-grade non-fluid oil to the gears every two or three weeks, when the drills are in constant operation. Every two months the gear case should be removed, the old grease cleaned out and a liberal quantity of fresh grease applied around the gears.

The revolving journals do not require a large amount of oil at any one time, as the lubricating chambers are of ample capacity to hold a considerable supply, but in order that these chambers may not be permitted to become empty it is desirable to make a practice of applying a small quantity of a good grade of light lubricating oil each day. Oil cups communicating with the lubricating chambers will be found on the commutator bonnet and on the gear case. The chamber on the gear case takes care of the oil supply for the spindle bearing, lower armature bearing and lower intermediate gear bearing. The upper intermediate gear bearing is oiled from a lubricant chamber in the transfer plate, between the gear case and motor housing. An oil screw will be found in this transfer plate, which it is necessary to remove in order to apply the oil.

**Commutator and Brushes:** Commutator and brushes should be examined occasionally to see that excessive wear is not taking place on either part. Removable enclosing covers permit the brushes and commutator to be examined without difficulty. The commutator should be kept fairly clean and the brushes should not be permitted to wear too short. The brush holders are provided with springs of the cock-spring type, which give a uniform pressure through a wide range so that no adjustment is required after leaving the factory. The brush holders are carefully set in position for proper commutation and should not be tampered with. Use No. 00 sandpaper in cleaning the commutator; never use emery cloth.

**Ventilation:** When the drills are being examined it is a good plan to clean out the air holes in the housing and enclosing covers. These should be cleaned from the inside, if possible, so as to remove the dirt instead of pushing it into the machine.

**Switch:** The switch furnished with the Duntley drill is of the quick-acting type and should be cleaned occasionally. The switch mechanism, which is located in the pipe handle of the switch, requires a small amount of oil at very long intervals.

**Cable:** Do not permit your men to drag the drills around by the cable.

**Feed Screws:** Do not use feed screws other than those furnished by this company. A longer feed screw is apt to cause trouble by being screwed down too far and cutting into the windings.

**It will well repay you to follow the above suggestions.**

---

### The Modern Family Dines.

The Son—"Hey, shoot the juice."

The Father—"Cut out that slang, please."

The Mother—"That's a peach of a way to correct the kid."

The Father—"I only wanted to put him wise. Such talk will queer him."

The Son—"Ishgabibble."

# IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air  
and Electrical Appliances

BY THE

**IDEAL POWER PUBLISHING CO.**  
1014 FISHER BUILDING  
CHICAGO, U. S. A.

C. I. HENRIKSON Editor

Vol. 11 JULY, 1915 No. 7

## TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 50 cents per year

## ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our  
subscription list.

### Little Giant Chosen as Official Truck for Lincoln Highway Coast-to-Coast Caravan.

The Little Giant truck was recently chosen as the official truck to accompany the Lincoln Highway Automobile Caravan which left New York on May 15th, passed through Chicago Heights on July 2nd and which expects to reach San Francisco on August 19th. The Little Giant left Chicago on July 7th and will overtake the caravan at Omaha.

Le Roy Beardsley, Jr., and Earl C. Phillips have charge of the truck which is to be used as a tender to the automobile party for carrying baggage and the moving picture paraphernalia. Mr. Phillips has recently come from Australia where he represented the Little Giant Truck Department of the Chicago Pneumatic Tool Co.

The caravan consists of four cars with the following passengers:

- H. C. Osterman and wife.
- O. P. Canaday and wife.
- Edw. G. Holden.
- R. C. Sackett.
- T. A. Stalker.
- Leon Loeb.
- R. W. Reiling.

Mr. Osterman is head consul of the Lincoln Highway Association.

Altogether 414 towns will be visited and moving pictures of 65 of them will be taken en route, the object of the expedition being to give publicity to the

beauties and the practicability of the Lincoln Highway, and arrangements have been made with the leading moving picture concerns to run these films all over the country.

The Little Giant truck is fitted with Prairie Schooner top and is decorated with emblems of the Lincoln Highway Association and is well equipped and prepared for the long and strenuous journey before it.

It is equipped with a Stewart Speedometer and two Stewart Warning Signals furnished by the Stewart-Warner Speedometer Corporation; two Pyrene fire extinguishers furnished by the Pyrene Co.; a Prest-o-Lite tank furnished by the Prest-o-Lite Co., and a set of Firestone tires by the Firestone Tire & Rubber Co.

### Special Little Giant Truck Supplement

Did you get a copy of the Special Truck Supplement issued in connection with this July issue? If not, send for it. It goes into motor trucking quite thoroughly, shows practically every style of body that has ever been built, and gives the experiences of many users. If you are not interested in an auto truck now, you will be some day and a perusal of this supplement now may give you something to think about and may guide you in the right direction. Your copy is awaiting receipt of your request for it.

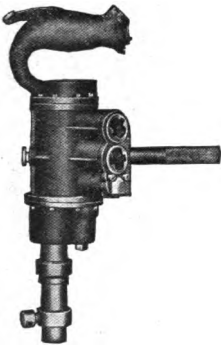
### Our Language.

The intricacies of our language are well illustrated in the definition given of a sleeper.

A sleeper is one who sleeps. A sleeper is that in which the sleeper sleeps. A sleeper is that on which the sleeper runs while the sleeper sleeps. Therefore, while the sleeper sleeps in the sleeper under the sleeper the sleeper carries the sleeper over the sleeper under the sleeper until the sleeper which carries the sleeper jumps the sleeper and wakes the sleeper in the sleeper by striking the sleeper on the sleeper, and there is no longer any sleeper in the sleeper on the sleeper.

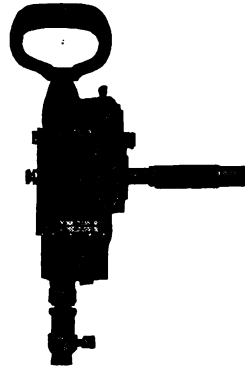
# Boring Wood With Air

In a pneumatic wood boring machine the object is to get minimum weight in a reversible air motor that will successfully handle the standard wood boring bits that are now on the market.

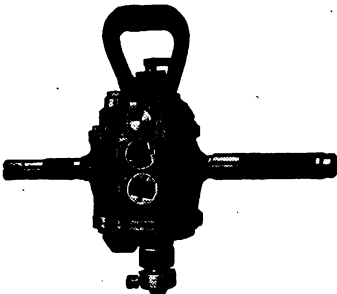


No. 10 S Little Giant Wood Boring Machine, Capacity  $\frac{3}{4}$  in.

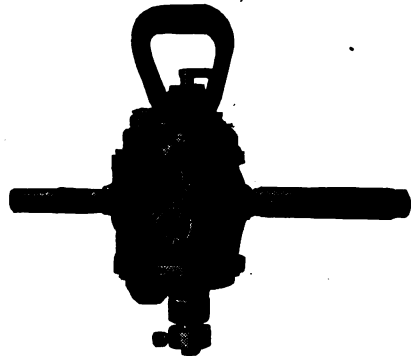
**Little Giant Wood Boring Machines Meet These Conditions**



No. 3 Improved Little Giant Wood Boring Machine, Capacity 1 in.



No. 5 Improved Little Giant Reversible Wood Boring Machine, Capacity 2 in.



No. 14 Improved Little Giant Reversible Wood Boring Machine, Capacity 4 in.

Bulletin 127 tells all about these.

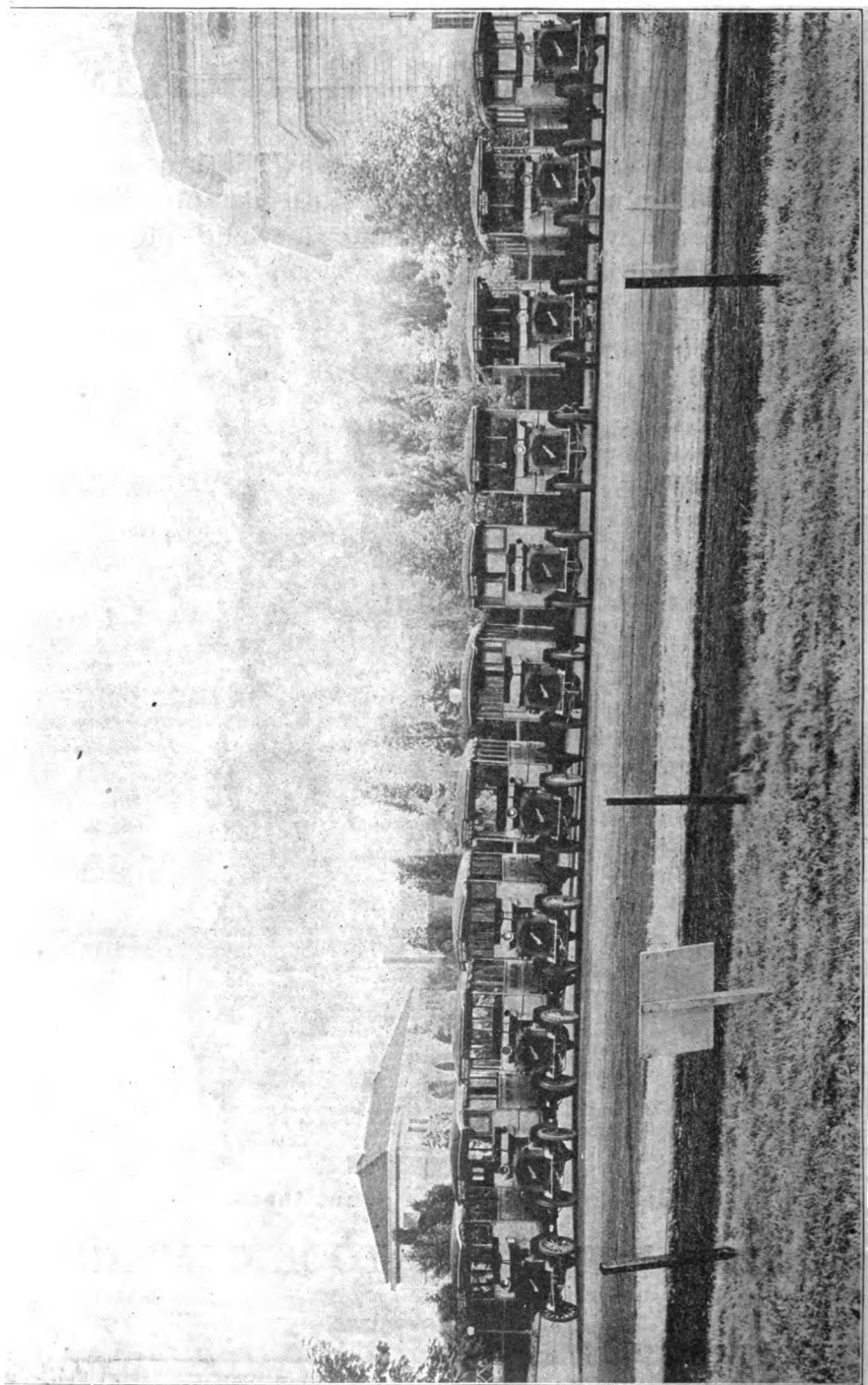
**CHICAGO PNEUMATIC TOOL COMPANY**

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#### THE LITTLE GIANT "YELLOW JITNEY" FLEET.

Showing eleven of a fleet of "Little Giant" Trucks which have been sold to the Arlington-Barcroft Auto Co., of Washington, D. C. by the Chicago Pneumatic Tool Co. They are all exactly alike, have very attractive bodies and are called "The Yellow Jitney Line." Sixteen Little Giant Trucks are now in service with that one line in Washington and twelve more have just been sold making a fleet of twenty-eight trucks.

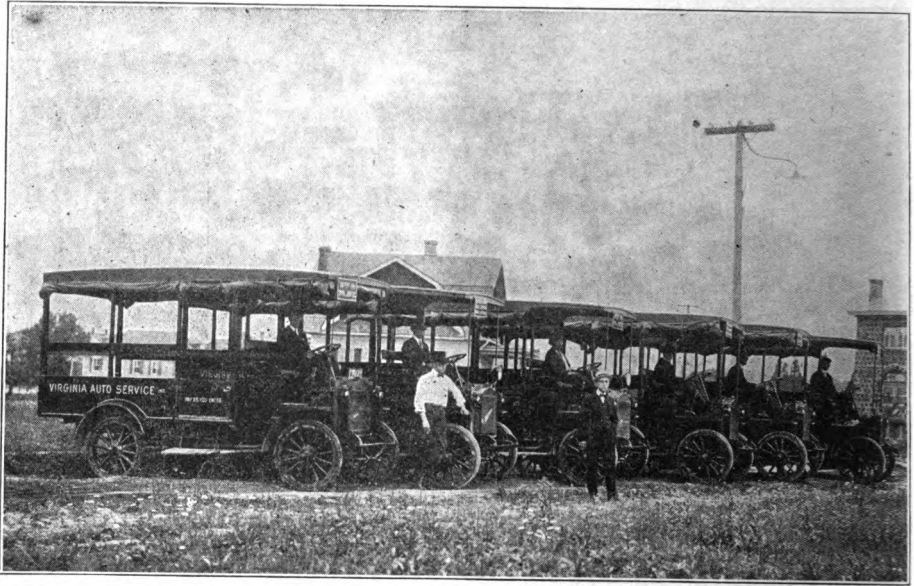


Showing side view of one of the "Yellow Jitney" Fleet of twenty-eight, owned by the Arlington-Bargcroft Auto Co., Washington, D. C.

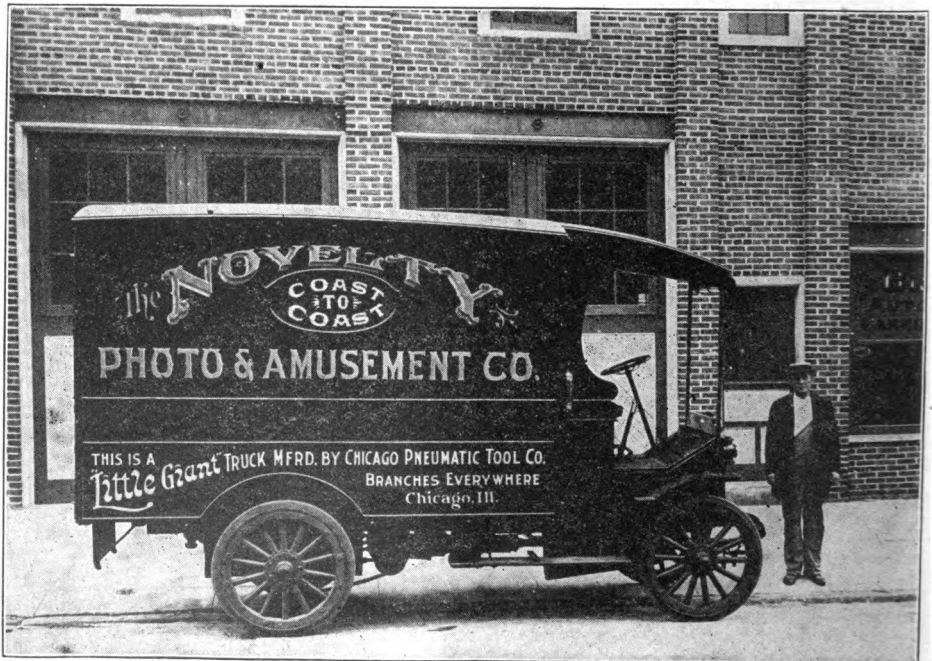


Showing interior of "Yellow Jitney" Bus. No lack of comfort here, and good enough for the best to ride in.





Six Little Giants Doing Jitney Service for the Virginia Auto Service Co., Washington, D. C.  
Six Additional Trucks Have Just Been Ordered.



This truck started out from Philadelphia and is taking moving pictures all the way to the Panama-Pacific Exposition at San Francisco. The films will be shown later in practically all of the moving picture theatres in the United States.



Showing how the Little Giant Six Wheeler Handles a Big Load of Long Lumber

### The New Little Giant of Six Wheel Construction

Industries having bulky or long but light loads to transport, frequently fail to realize the expected economies of motor truck transportation owing to the very limited loading space which the ordinary chassis affords. In the ordinary four wheel truck the power is applied through its traction wheels and motor truck practice is to place the entire load or the greater portion of it directly over or slightly forward of the traction wheels. The traction wheels must therefore both carry and push the load.

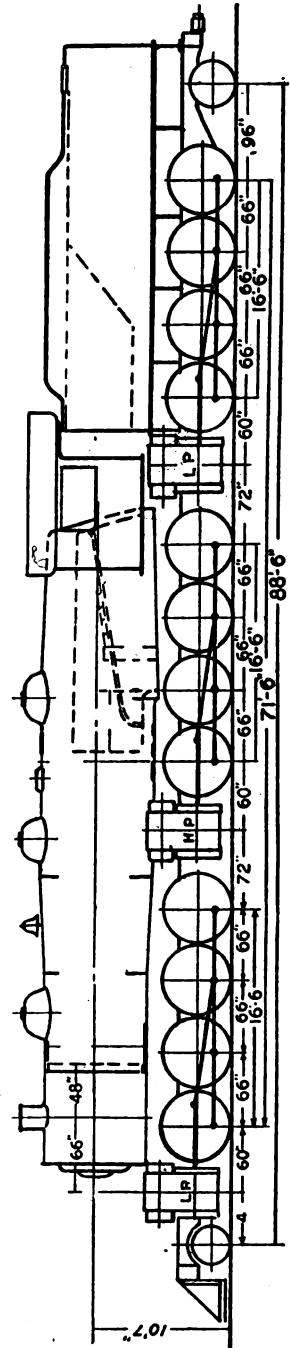
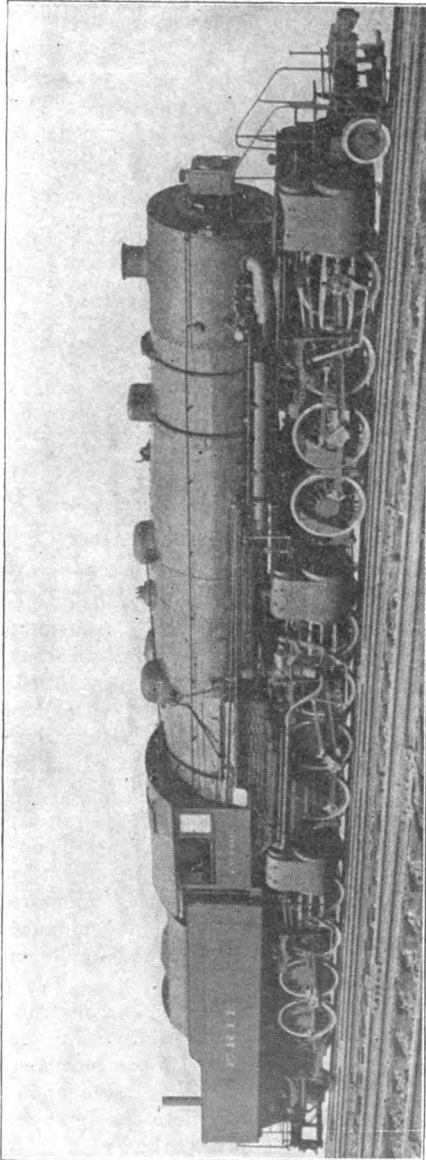
In the Little Giant Six Wheel Truck these objections are overcome. The power of the motor is utilized to draw the load instead of carrying it and pushing it, with the result that efficiency of the power unit is doubled. In the Six Wheel construction only sufficient of the load is placed upon the chassis of the truck to secure proper traction. But the weight so imposed is not rigidly fastened to the chassis but rests upon a ball race making it a live or floating load. This

feature, naturally relieves the running gear and engine from the shock and strain which a load ordinarily transmits to a truck as a result of the constant vibration due to irregularities of roadbed, and also affords relief from strain in starting and stopping. This relief from the shock and strain is so great that the life of the motor is naturally increased and has even been doubled.

In the Little Giant Six Wheel Construction, the rear wheels absolutely track and the driver need have no more concern for the movement and guidance of the load than in ordinary four wheel construction.

The Little Giant Six Wheel Construction is of such a nature that anyone owning a Little Giant truck can purchase the additional outfit with all the apparatus necessary to complete the arrangement and easily apply it, thus making it possible by doubling the load space of the truck to double its carrying capacity.

Correspondence concerning the Little Giant Six Wheel Truck should be directed to the Motor Truck Department, 1470 Michigan Ave., Chicago.



### New Erie Mallet Compound

The cuts on the adjoining page illustrate the latest development of powerful freight locomotives, namely, the six-cylinder type articulated Mallet compound, a specimen of which will be placed in service on the Erie Railroad, says the Erie Railroad Employes Magazine.

Its total weight with tender is 410 tons, and it has greater tractive power than any engine ever built.

It is unique in that it will utilize the large weight of its tender to furnish adhesion for the third set of drivers. It has been, generally, the practice to carry the dead weight of the tender without deriving any power from it. When it is considered that a loaded tender weighs more than half as much as the engine itself, it can be seen that considerable power is required to haul the tender and that a great advantage should result from putting drivers under it; at least from a standpoint of tractive power per total weight of engine and tender.

The locomotive is being designed and will be built by the Baldwin Locomotive Works, Philadelphia, and will have the following general dimensions:

Tractive power, 160,000 lbs.; size of cylinders (3 sets), 36 in. x 32 in.; diameter of drivers, 63 in.; driving journals, 11 in. x  $13\frac{1}{4}$  in.; firebox (radial stay type), 162 in. x 108 in.; flues,  $5\frac{1}{4}$  in., 53; tubes  $2\frac{1}{4}$  in., 318; length of flues and tubes, 24 ft. 0 in.; weight on engine truck, 30,000 lbs.; weight on engine drivers, 480,000 lbs.; weight on tender drivers, 260,000 lbs.; weight on trailer, 50,000 lbs.; total weight, engine and tender, 820,000 lbs.; heating surface, firebox 310 sq. ft.; heating surface flues, 1,825 sq. ft.; heat surface, tubes, 4,480 sq. ft.; heating surface, arch tubes, 40 sq. ft.; heating surface, combustion chamber 95 sq. ft.; total heating surface, 6,750 sq. ft.; heating surface of superheater, 1,530 sq. ft.; grate area, 90 sq. ft.; water capacity of tender, 10,000 gals.; coal capacity of tender, 16 tons.

The locomotive will be equipped with a Street Stoker, and will have the Baker

valve gear and Schmidt superheater. Being a radical departure from other designs of locomotives, its service will be watched with keen interest.

This monster engine will be called "Matt H. Shay," in honor of a retired engineer on the Mahoning Division of the Erie, a faithful and loyal employe and as trustworthy an engineer as ever guided a train.

### A Business Man.

Congressman Brown, of the Oyster Bay District in New York, was speaking of the Jewish instinct for striking a bargain and during the conversation told this story:

"Jacobs and Bernheim were joint partners in the woolen cloth business, Jacobs being the Eastern salesman for the firm. While traveling in the East he was taken ill and died. The undertaker who took charge of the body wired Bernheim: 'Jacobs died, can embalm him for fifty dollars, or freeze him for twenty-five dollars.'

"Bernheim wired back: 'Freeze him from his knees up for fifteen dollars; his legs vere frost-bitten last vinter.'"

By way of enlarging the children's vocabulary, our village school teacher is in the habit of giving them a certain word and asking them to form a sentence in which that word occurs. The other day she gave the class the word "notwithstanding." There was a pause, and then a bright-faced youngster held up his hand.

"Well, what is your sentence, Tommy?" asked the teacher.

"Father wore his trousers out, but notwithstanding."

"I suppose," said the sympathetic neighbor, "that you will erect a handsome monument to your husband's memory." "To his memory?" echoed the tearful widow. "Why, poor John hadn't any. I was sorting over some of his clothes today and found a pocketful of letters I had given him to post."

*"Boyer"*

# Good Management in the Home



is shown by big results without drudgery. Thorough and constant cleanliness of carpets, rugs, draperies and upholstery with least possible time and effort is the ideal of every housewife, and every husband and provider should invest in a

## Duntley Electric Cleaner

and make some woman happy.

The Duntley is made in sizes suitable for use in offices, hotels, churches, theatres, large or small homes, cottages or apartments, and for commercial cleaning.

### AGENTS WANTED

Some Good Territories Still Open

## Duntley Products Sales Company

732 Michigan Ave., CHICAGO

I am in the market for a Duntley Electric Cleaner. Please quote me prices and send descriptive literature.

Name .....

Address .....

I am interested in agency proposition for following territory.....



*"Duntley"*

*"Duntley"*

When writing to advertisers please mention Ideal Power.

**My Efficiency.**

In an organization, as in a chain, the weakest link determines the strength. And the effectiveness or efficiency of the organization depends on the effectiveness of the individuals as well as their fitness to work together. Each one, to be effective, must be personally efficient, and as it is well to test the efficiency of a machine, so is it good to test our own efficiency to determine whether we can improve and where; to take account of stock, and find along what lines should be our effort to expand.

Following are a few leading points for self analysis, suggested by Edward Earle Purinton in *The Independent*. An honest "Yes" would mean 100; an honest "No" 0; a partial credit can be made according to the self judgement of the individual. The sum total of the credits divided by 25 will give your average estimated efficiency.

If you're not satisfied with the average, the credits will indicate where thought and effort can be applied to raise it.

**Per Cent**

1. Is your work agreeable?.....
2. Are you doing it in the best, and quickest way? .....
3. Have you found where your greatest power lies? .....
4. Have you a definite aim in the line of this power? .....
5. Are you positive of your own future success? .....
6. Can you look on the bright side, always? .....
7. Do you know how to get well and keep so? .....
8. Do you know what habits and emotions hurt your work? .....
9. Are you correcting your weaknesses? .....
10. Have you taken stock of your strong and weak points of mind and character? .....
11. Do you know what food, exercise and baths are most beneficial?... ..
12. Are deep breathing and an erect body habitual? .....

13. Is your sleep long and refreshing and room well ventilated? .....
14. Are your meals regular and eaten slowly? .....
15. Do you wear loose, comfortable clothing? .....
16. Are you positive and courageous?.. ..
17. Are you tactful and courteous?....
18. Do you get the co-operation of fellow workers? .....
19. Do you plan your day ahead? .....
20. Do you save money systematically? .....
21. Do you like good music and good reading? .....
22. Have you ambition to be of real service to Humanity? .....
23. Do you seek good advice and helpful associates? .....
24. Is your leisure spent profitably? ...
25. Are your relaxations pleasant and helpful? .....

**Club Talk.**

He came from St. Louis, and had all the discriminating tastes of a native of that burg. He carefully scrutinized the menu card at the Club endeavoring to find something that was fit to eat, and perfectly proper for a man of his standing to indulge in publicly, when he discovered something that seemed to appeal to him. He looked about anxiously for a waiter, lest in a too extended delay, he might either lose the place on the card, or his appetite for the dish he had selected. "George," he called to the servant that appeared on the scene at that moment, "What are these pan-fried flounders?"

"Why those," answered George, somewhat confusedly, "why those are—why they are flounders, you know,—flounders fried in a pan."

The gentleman from St. Louis looked relieved. "Bring me some," he said, folding up the card, and leaning back in his chair with the air of one who had suddenly acquired a vast accumulation of knowledge.





A lazy man makes much ado about nothing.

Men, like pins, are no good if they lose their heads.

Never strike a man when he's down—especially for a loan.

Opportunity never troubles a man if there is nothing in him.

Women do not like new wrinkles any more than they do old ones.

The early bird that monkeys with the early bee is apt to get stung.

Those who suffer in silence usually have a lot to say about it later.

The man who says he is glad he is married is either an optimist or a liar.

Anticipations and regrets show up oftener than anything else during a man's earthly career.

Poverty is said to be a sure cure for dyspepsia, but the cure may be worse than the disease.

What would the world do without woman? Nine-tenths of the dry goods stores would go out of business, for one thing.

Our idea of a foolish woman is one who is jealous of every other woman who comes within a mile of her wage earner.

Many a rich man will probably find it as difficult to enter the kingdom of heaven as he finds it easy to keep outside a mundane jail.

Self-satisfied people have reached the jumping off place.

No man should try to run an auto unless he has horse sense.

A fool can lay plans, but it takes a wise man to hatch them out.

Occasionally a knocker throws away his little hammer and gets an ax.

Some people remain poor because they buy too many things they don't need.

Experience is a great teacher, but even experience can't teach some people.

A woman fights harder to get into society than she prays to get into heaven.

If you keep quiet and listen you may learn a lot from people who talk too much.

The man who always looks straight ahead misses a lot of beautiful scenery on the side.

Blessings of poverty are appreciated, especially by those who have never been blessed that way.

An income tax means an outgo check. To be good, according to some people, is to be a hasbeen.

Some people are always saying: "There ought to be something done about it," but they never do anything themselves.

After a man has learned that he can't beat another man at his own game, he begins to dodge the individual with a get-rich-quick scheme.

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# IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Trucks  
By THE IDEAL POWER PUBLISHING COMPANY  
Fisher Building, Chicago

VOL. XI

AUGUST, 1915

No. 8

## "Hummer" Self Rotating Hammer Drills

The world-wide adoption of the power hand hammer drill to replace the more cumbersome and less profitable mounted drill for all light rock drilling and kindred work has brought about the insistent demand for the best drill of the kind possible to produce.

When the "Hummer" drill was placed on the market, we believed we had produced the nearest to the ideal hammer drill. This belief has now become a firm conviction owing to the immediate and continued recognition accorded the "Hummer" drill by the users, on points of superior design, efficiency, durability and upkeep and the preference shown by the drill runners for the drill they themselves have christened the Hummer.

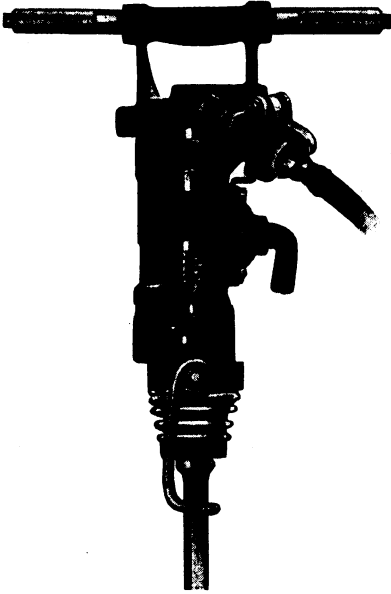
It is gratifying to us to have been able to produce a drill the unique features of which result in such excellence as to make it a remarkable product. It is logical, however, that we should have been able to do so. The twenty years of experience we have had as the foremost manufacturers of pneumatic percussive tools has qualified us to continue to excel in that line, and this experience is incorporated in the design, material and manufacture of the "Hummer" drill.

**General Design:** The drill chuck at the front end of the Hummer drill is ro-

tated by two simple and strong gears operated by a shaft which is driven by a worm gearing from the rotation motor at the upper end of the drill. The rotation motor is a simple form of the rotary type and the compressed air exhausted from it instead of being led to atmosphere is discharged into the valve chamber of the hammer cylinder and operates the hammer piston by means of a ball valve action.

This general design results in a sturdy, well-balanced and compact structure throughout. By locating the rotation motor at the upper end it is farthest removed from the strains and shocks of the hammer blows at the front end of the drill and the distribution of the parts is such as to permit each part being made simple and strong and well-calculated to stand up under the severe conditions to which the rock drill is ordinarily subjected.

A distinctive feature of the "Hummer" drill is the valve that governs the reciprocation of the hammer piston. It consists of a standard commercial hardened steel ball—such as is used ordinarily for ball bearings. The ball is three quarters of an inch in diameter and weighs a trifle over one ounce. The travel between its seats in the valve chest is only one-eighth of an inch. Perfect in its action. Practically indestructible.



A-66 "Little Hummer."

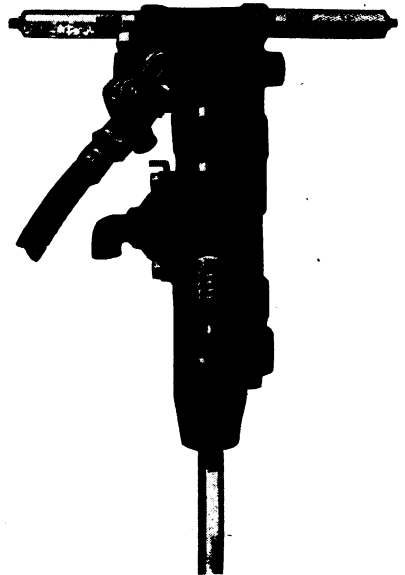
Ideally simple compared with other rock drill valve mechanisms.

**Rotation:** The rotation of the drill steel is effected by the motor located at the upper end of the drill, in the handle part and is entirely independent of the hammer piston. The compressed air to operate the drill first enters the rotation motor, causing the rotor of the motor to revolve at a high speed. The rotor shaft is provided with a worm thread that meshes with a worm gear on the outer end of the shaft that transmits the rotary movements to the pinion and gear at the lower end of the drill for turning the drill chuck. The rotation mechanism throughout is continuous in one direction and does not have any ratchet or pawl parts. The high speed of the rotation motor and the large ratio of gear reduction between the motor and the drill chuck gives a strong rotation pull on the drill steel. The parts are few, simple and strong and accessible and cannot be incorrectly assembled.

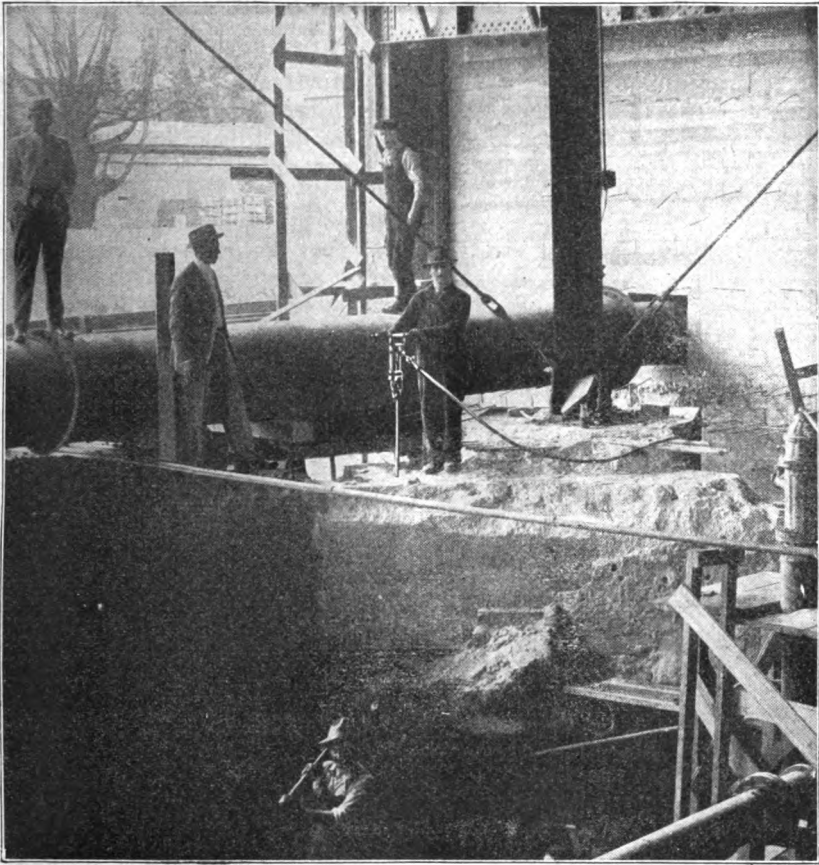
**Piston:** The hammer piston has no connection with any other part of the drill and is perfectly free in its move-

ments, in both directions, in the cylinder. It is a simple part without any holes or chamber or spiral flutes to weaken it. **Just plain piston.** Structurally of great strength—as a hammer piston should be; and the freedom of its action gives high velocity and a hard blow.

In connection with the exhaust from the drill cylinder a slide or shutter is provided which by a slight movement chokes the exhaust ports in the cylinder, causing the hammer piston to stop striking hard and allowing practically the full force of the live air to pass through the hollow drill steel to clear the hole of the cuttings when the air that ordinarily passes through the steel is not sufficient to prevent a portion of the cuttings from accumulating. There is permitted, however, a sufficient amount of exhaust through the hole in the steel and the loose fit of the shutter to allow the rotation motor to turn the drill steel—allowing the drill steel to be easily withdrawn from the hole being drilled. The shutter is located between the side of the cylinder and the exhaust cap or bonnet and is fully protected from abuse in handling. The use of the exhaust shut-



B-66 Hummer."



A-66 "Little Hummer" drilling holes for removal of reinforced concrete for engine foundation. A one and one-half-inch diameter hole, two feet deep, was drilled in three minutes—air-pressure at drill, seventy pounds per square inch.

ter prevents liability of breakage of front head of the drill from careless handling.

The drill chuck is broached to take the usual collared steel with shank  $3\frac{3}{4}$  inch long  $\frac{7}{8}$ -inch hexagon section. To retain the steel in the drill chuck and to provide means to churn the steel in a clogged hole or to withdraw the steel from the hole, a swinging holder is provided which is pivoted to a strong forged ring that encircles the front head of the drill. This ring rests upon a heavy spiral spring that absorbs the shock of the hammer blows on the drill holder when the drill runner carelessly allows the hammer piston to hit the front head.

**Throttle Valve:** The throttle has been designed to overcome the objections to the ordinary taper plug cock throttle. The straight piston valve is made of tool steel, hardened and ground and moves vertically in a bronze bushing that is forced into the drop-forged steel body. The valve moves upwards by a spring pressure and downwards by a cam portion on the lever handle. The cam is provided with a flat surface to hold the valve full open when the drill is running. Quick in action. Readily and easily operated. Handle cannot become loose. Vibration of drill cannot partially shut off air supply as the lever handle moves

in line with the hose and not crosswise to the hose. **It stays put.**

**Strainer:** One end of the throttle valve body is formed to hold a strainer as shown in cut. The strainer is provided with a fine mesh screen in order to prevent dirt or scale from the pipe line or particles of rubber from the hose entering the drill.

**Oiling:** The most essential and yet the most neglected detail in order to obtain the best results from all rock drills is that of proper lubrication. Particularly is this so with the high speed automatic rotation hammer drill. It is obvious that such a piece of machinery in order to return a maximum profit as to work performed and low cost of upkeep should be kept clean inside and well oiled at all times. It is difficult, if not well-nigh impossible, to impress the ordinary hammer drill runner with the importance of oiling his drill before it becomes "bone dry" for want of oil and stops on account of some of the parts being cut fast to each other or a breakage occurring. It is not as much on account of willful neglect on the part of the drill runner as it is forgetfulness and as long as the drill keeps on running he does not think about oiling it. To offset this habit of the drill runner forgetting, we have designed the "Little Hummer" drill so that the rotation will gradually slow down and then stop if needing oil or becoming choked with dirt, before damage has occurred to any of the parts. This is an automatic signal to the drill runner to either oil his drill or clean it, or both. This feature has been well received and is especially popular with the drill runners, who are engaged in mine contract work and are compelled to purchase drills for their work.

The handles of the "Hummer" drills are hollow and provided in the central portion with a cartridge consisting of a perforated metal tube filled with cotton wick. By filling the handles with oil the cartridge feeds the oil continuously in small quantity when the drill is in operation. One filling will last several hours

constant running. A half gallon can of oil as sample is furnished with each drill.

**B-66 "Hummer" Self-Rotating Hammer Drill:** This drill has been designed to meet the demand for a drill for down holes or sinking. It is not required to collar the shank of the steel for this drill, as the piston strikes an anvil block or tappet as shown by sectional drawing on page 14 of Bulletin 216.

By interposing the anvil block between the piston and the drill steel, the piston blow is slightly diminished, but this loss of force is so slight that it is more than made up by the economy of using drill steels that do not require a collar or special forged shank.

The B-66 "Hummer" is 15 lbs. heavier than the A-66 "Little Hummer," but is preferred for down hole drilling on account of this extra weight making it steadier in operation and a more rapid driller. It is a general favorite on subway construction work and for sinking trenches. Unless otherwise ordered, the front head chuck is broached to take 1-inch hexagon steel.

**C-66 "Big Hummer" Self-Rotating Hammer Drill:** This drill is exactly the same in design and construction as the B-66, excepting the length of piston stroke, and longer cylinder and rotation shaft. The front head chuck bearing is also longer to allow the heavier drill steel to have a greater shank surface in the chuck. Most of the parts of this drill are interchangeable with like parts of the B-66, which is a desirable feature for those who use both sizes, as it simplifies carrying duplicate parts for repairs.

The C-66 "Big Hummer" is by far the best one-man hammer drill that has been produced. It weighs 65 lbs. and will cut faster and with far less fatigue to the drill runner than other drills of heavier weight offered for the same work. For shaft sinking it has no equal.

For further details consult Bulletin 216 which the Chicago Pneumatic Tool Co. will supply on request.

# To Machinery Dealers and Supply Houses

We want agents and dealers to represent us in territory still open for the sale of our line of "Giant" Fuel Oil and Gas Engines and Compressors, and have a very attractive offer to make reliable houses that wish to make business connections with a \$11,000,000.00 corporation with a record of more than twenty years of business success to its credit.

"Giant" Fuel Oil and Gas Engines are made in four prime sizes, 12, 18, 25 and 45 horse power, and the 25 and 45 H. P. sizes may be supplied duplex, thus giving units up to 90 horsepower capacity. The single units are truck mounted for portable use when desired.

The Giant Fuel Oil and Gas Engine will operate successfully on any of the following grades of fuel: Crude Oil, Fuel Oil, Residuum, Stove Oil, Star Oils, Tops, Tar Oil, Solar Oil, Gas Oil, Engine Distillate, Holder Oil, Coal Oil, Kerosene, Alcohol, Motor Spirits, Naphtha, Benzol, Gasoline, Natural Gas, Producer Gas.

It has no valves, gears, carburetors, mixers, oil or air heaters, magnetos, batteries, timers, switches, coils, wires or spark plugs.

The employment of a single cylinder minimizes working parts and their consequent friction. The crosshead construction is extremely important, providing features of advantage over the trunk piston type that cannot and must not be ignored. The crosshead removes from the piston head the angular thrust of the connecting rod with its tendency to wear the top and bottom of the cylinders more than the sides, with the result that oils of a heavy or asphaltum base will work back and under the piston rings, hardening there and causing excessive cylinder wear.

With the crosshead type all bearings are accessible and by compressing in the front end of the cylinder instead of in the crank case, better compression is secured, there being no joints to offer opportunity for leakage and the compression space is greatly reduced. Lubricating oil from the crank case cannot possibly enter the combustion chamber and disturb regulation.

In design the Giant Engine is the simplest on the market, and its lack of complicated parts and mechanisms recommends it for use in isolated localities, where breakdowns are fraught with serious consequences.

Agents with whom we make connections will be furnished with Bulletins and Salesmen's Catechisms dwelling on the superior merits of the "Giant" engine, explaining thoroughly in the form of questions and answers, all the details of construction and operation, and setting forth very clearly, relative values of the various grades of crude oil, comparative costs of operation, etc.

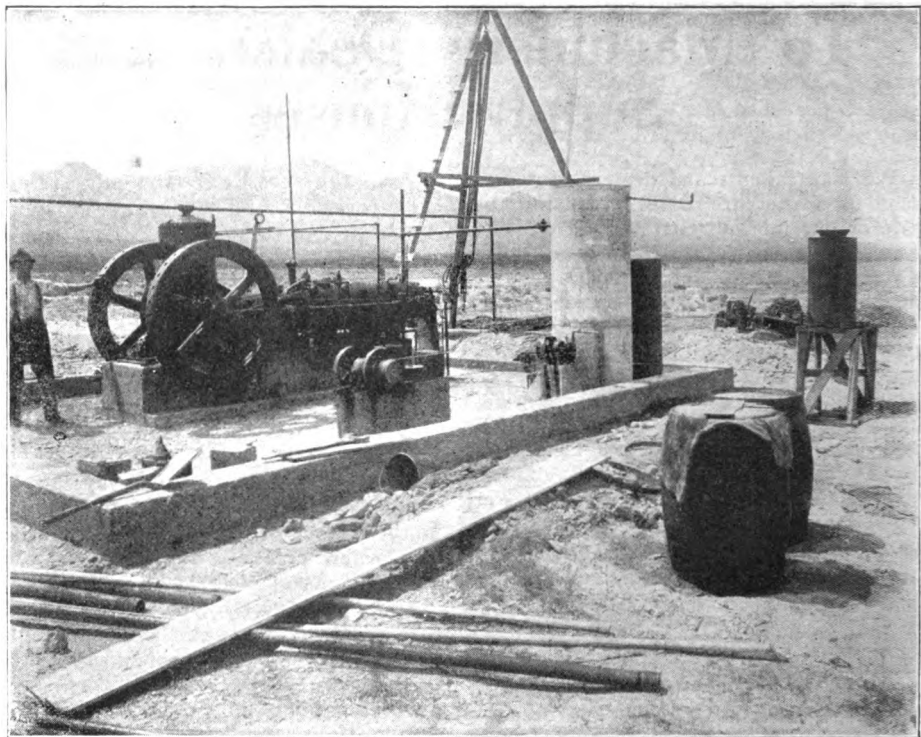
Our own sales representatives, attached to our branch offices throughout the country, are available to furnish information and assist dealers in effecting sales.

Our "Chicago Pneumatic" Compressors, our Boyer Hammers and Little Giant Drills, our Duntley Electric tools and Little Giant trucks are known throughout the world and we want live agents to introduce our lines of "Giant" Fuel Oil and Gas Engines and Compressors, in localities where we are not yet represented.

Correspond with us. This is a real opportunity.

Compressor and Engine Department  
**Chicago Pneumatic Tool Company**  
1014 Fisher Building  
Chicago, Illinois





Class N-SO "Chicago Pneumatic" Fuel Oil Driven Air Compressor on J. A. White Ranch, near Fort Bliss, Texas.

**ONE Chicago Pneumatic Fuel Oil Compressor Pumps Sufficient Water Supply a Town of 2,000 Inhabitants.**

The cuts on this and the adjoining page show a "Chicago Pneumatic" Class N-SO Fuel Oil Driven Air Compressor installed by Don A. Carpenter & Co., on the J. A. White ranch, three miles northwest of Fort Bliss, near El Paso, Texas. It is probably the most interesting air lift plant in the southwest, one compressor pumping two wells each about 600 feet deep, the water standing about 250 feet from the surface. The compressor forces the air down into the wells, and though the wells are not yet entirely free from the sand, the water is raised in sufficient volume to supply a town of 2,000 inhabitants.

Class N-SO Compressors are made in four standard strokes 8, 10, 12 and 14

inches with capacities from 70 to 300 cubic feet. They may be supplied portable (on truck) or skid mounted as well as stationary.

---

**Elucidated.**

"Henry, it says here that Mr. Jackson pelted the pill for three sacks. What does it mean?"

"Good heavens, Mary, can't you understand plain English? It means that he slugged the sphere safe and landed on the third pillow."

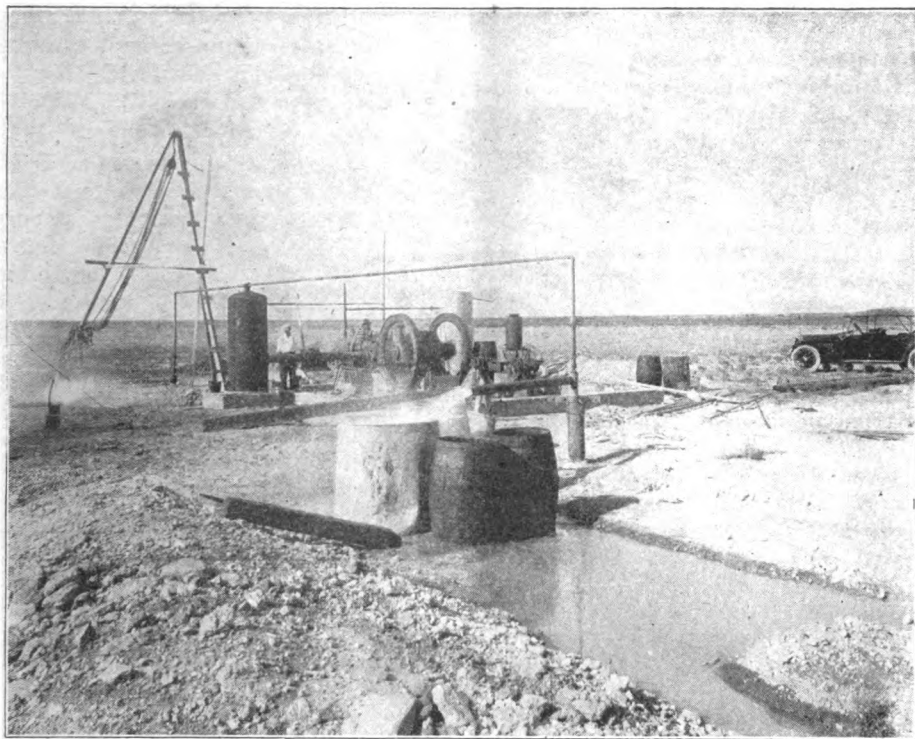
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**Amicable Alice.**

Alice—"Papa, it's going to snow."

Papa (who is busy)—"Well, let it snow."

Alice—"I was going to, Papa."—March Lippincott's.



Another View of Compressor Shown on Opposite Page. Both Wells Discharging.

### Compressed Air Cleans Concrete Road Base Before Oiling.

On certain parts of the California highway system now under construction it has been found that before the surfacing oil could be applied sufficient dust had formed on the concrete base to interfere with the proper bonding of the oil. After some experimenting a compressed-air apparatus was improvised which satisfactorily removes all dust and loose particles on the surface, it is stated, without requiring any extra trips over the road.

The device consists of a small air compressor mounted on the oil truck itself and geared to its main driving shaft. From the pump compressed air is conveyed to a 1¼-in. pipe fixed horizontally about 2 ft. above the road surface and 2 ft. ahead of the oil spreaders. This pipe is perforated by 1/32-in. holes spaced

1¼-in. apart. The air is delivered at a pressure of about 30 lb. per square inch and is said to drive off a continual cloud of dust even when working over a surface on which ordinary inspection shows no appreciable quantity of dust particles.—Engineering Record.

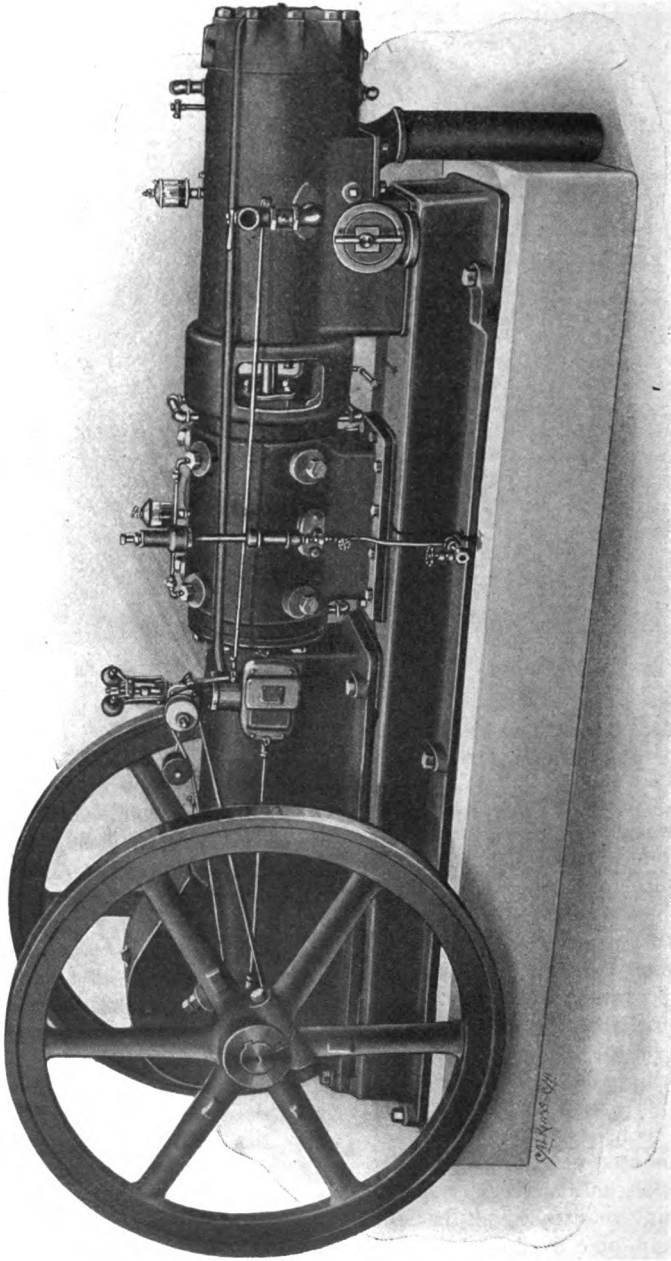
### Shocking.

Some women's ways are really shockin'.  
They hide their cash in—I'm not  
knockin',

But banks there is no way of lockin'.  
They should beware and take no  
stockin'. —Exchange.

"Rastus, what's a alibi?"

"Dat's proving dat yoh was at a prayer meetin' whar yoh wasn't in order to show dat you wasn't at de crap game whar yoh was."—Life.



Class N-SG "Chicago Pneumatic" Gas Driven Air Compressor. See Bulletin 34-X.

### Riveting in Steel Car Construction.

[Abstract from an article in *Railway Age Gazette (Mechanical Edition)* by H. A. Hatfield, General Foreman, Canadian Car & Foundry Co.]

The importance of properly heating the rivets for machine riveting has been strongly represented. It is of still greater importance when the rivet is to be driven with a pneumatic hammer, since it must be at such a temperature that the shank will upset with the impact of the hammer. Unless the hole is thoroughly filled the rivet may be jarred loose; its holding power will then be reduced to the bearing pressure of the heads on the plates, produced by the contraction of the rivet material in cooling. Consequently, the first requirement of any riveting gang is a properly designed rivet furnace. The present market price of fuel oil makes it of the utmost importance that all the work possible be obtained from it. The furnace must, therefore, be built for the work, and the burner properly installed, as well as operated with intelligence.

Something of the art of heating should be taught the heaters instead of leaving the mastering of this important operation entirely to their experience at the expense of many gallons of fuel oil wasted and tons of rivets burnt. It is impossible to obtain intelligent operation while the present practice of hiring small boys for heaters prevails, hence it would seem advisable to so arrange the prices for this work that men capable of understanding instructions could be secured. It should first be shown the heater that oil will not burn in the liquid state, and that the burner is employed to break it up and mix it with the air necessary for combustion without waste. The second lesson should deal with the handling of the burner to obtain the proper mixture of oil and air; it should show how if too much oil is turned on it will smoke, and if too high air pressure is admitted to the burner it will carry the particles of oil beyond the

point where the work is to be done before they can be raised to the burning temperature. Best results are obtained with a short white flame that a heater will soon learn to recognize. He must also learn to know the proper temperature of the rivet by the color, and the nature of a burnt rivet.

The furnace should be located as close as practicable to the work and the shortest possible length of time intervene from the moment the rivet leaves it till it is headed; hence the gang must move quickly and complete each move in a positive manner, there being no remedy for a loose rivet but to cut it out and replace it.

The heater's comfort should be looked after, and some arrangement made so that he may approach the furnace without having to bear the direct heat from the doors. Different arrangements have been tried with success. Baffle plates and perforated air pipes below the door, to blow the heat upward, or water pipes above the door, perforated so that a sheet of water falls across the baffle plate and keeps it cool, are both very good methods. The shop windows should be painted or shaded if the sun shines on the furnace during the hot part of the day, as the two heats will sicken the toughest heater.

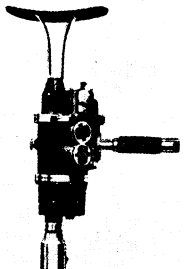
The number of rivets the gang has in a run being laid out for them, they should always proceed in the same rotation so that the heater will always know what length and diameter of rivets to send along, otherwise considerable time may be lost while the heater and sticker signal to one another. Of course, if the punching was inaccurate and the hole very much enlarged by the reaming, a longer rivet than usual will be required to fill it up, and signals must be given. A simple code for the purpose should be adopted and taught to each new heater.

Next in importance to the furnace installation is the supply of rivets and the method of keeping them at the furnace. Once the gang has had a full day on a run no difficulty should be ex-

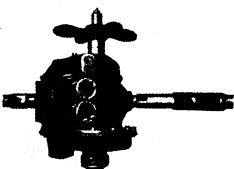
# Everything in Pneumatic Tools



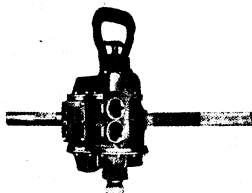
No. 10 F Little Giant Major Drill.  
For drilling light to heavy work in cast-iron, steel, 250 RPM. Capacity, 1 inch.



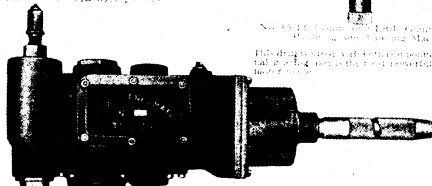
No. 3 Improved Little Giant Drill.  
Two speeds, 300 and 250 RPM. Capacity, 1 inch. Suitable for all work.



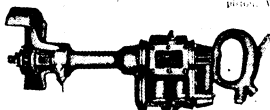
No. 1 Drill Driving Little Giant Drill.  
Fitting into and driving Little Giant Drill.  
Capacity, 1 inch.



No. 11 Improved Little Giant Drill.  
Reversible. Capacity, 1 inch.  
Fitting into and driving Little Giant Drill.



No. 12 Improved Little Giant Drill.  
Reversible. Capacity, 1 inch.  
Fitting into and driving Little Giant Drill.



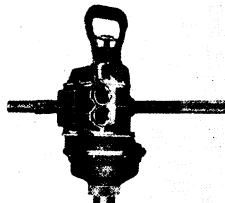
No. 4 Improved Little Giant Drill.  
For general and heavy work. Speed light, 300 RPM.



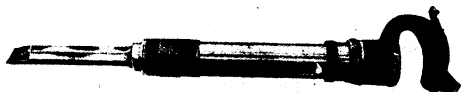
No. 10 F Little Giant Drill.  
For light work, speed light, 300 RPM.



No. 11 Improved Little Giant Drill.  
Reversible. Capacity, 1 inch.  
Fitting into and driving Little Giant Drill.



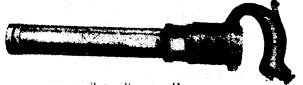
No. 12 Improved Little Giant Drill.  
Reversible. Capacity, 1 inch.  
Fitting into and driving Little Giant Drill.



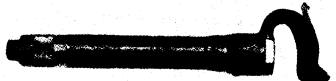
Bayer Riveting Hammer with Clutch.  
This clutch is built in place of the safety device, or can be used in place of the safety device. Well adapted for riveting hot rivets.



Bayer Chipping and Cutting Hammer.  
Made in many sizes and styles to adapt it to a wide range of work.



Bayer Riveting Hammer.  
Made in many sizes for driving up to 1/2 inch rivets.



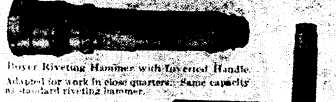
Bayer Hammer Little with Safety Device.  
The safety device is furnished when required and effectively prevents the slipping out of point of rivet.



1 1/2 x 6 Bayer Jam Riveter.  
Adapted for a wide range of work.  
Will drive 1/2 inch rivets in 24 gauge steel.



1 1/2 x 2 Bayer Jam Riveter.  
Smallest jam riveter made. Will drive 1/2 inch rivets in 24 gauge steel.



Bayer Riveting Hammer with Layered Handle.  
Adapted for work in close quarters. Same capacity as standard riveting hammer.



Bayer Pneumatic Hammer-on.  
For holding up rivets.

ASK FOR BULLETINS

## Chicago Pneumatic Tool Co.

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Everywhere

52 Vanderbilt Ave., New York

When writing to advertisers please mention Ideal Power.

perienced in obtaining the right size and length of rivets from the source of supply. The amount allowed each heater should be carefully checked and an investigation follow any unusual demand. The supply should be controlled by one man, who will report the amount per day supplied each furnace so that the proper sizes and lengths may be made as required.

Small bins built of steel should be placed at each furnace, the number of compartments corresponding to the number of different rivets in the run. For machine riveters usually a great number of the same size rivets are used, while on the shipping track it may be necessary to have six or seven lengths and possibly two or three diameters. In the first case there may be only two large compartments in the box or bin, while in the latter case it may have to be two tiers high to accommodate the number required. The construction should provide sufficient room for dumping the supply of rivets directly into this bin, and allow the heater to get them out with a shovel from the bottom.

Small rivets should be heated in a muffle furnace. If the quantity of rivets required does not justify building such a furnace, a short length of heavy pipe of a large diameter may be used, one end being plugged, or a couple of fire bricks may be placed so as to keep off the direct flame, though this method does not furnish very clean rivets.

For the safety of those working around him and persons passing by, the heater should be impressed with the necessity of looking before throwing the rivet to the sticker. The pause should be of sufficient length for his eyes to become accustomed to the light of the shop after the glare of the furnace.

The sticker should be taught the signal code and he should know the proper temperature of the rivet. He must be quick in his movements and adept at catching rivets. For this purpose a can should be furnished and the practice of stopping the flying rivet with the gloved

hand forbidden, as the effect of burns to the hands or scale in the eyes may prove serious. The can should be made of heavy, galvanized iron, special care being taken to have the handle comfortable to hold, and stiff enough to stand up under the blows received. If the sticker can reach his work from the floor, a triangular device made of thin plate may be used. It serves the double purpose of catching the rivets and protecting the floor from the heat. The tools provided the sticker include a pair of short tongs, which can be used with one hand for picking up the rivets a hammer for knocking off scale or driving the rivet into the hole, and a wrench. it being his work to remove the assembling bolts.

In car construction the variety of dolly bars is great and new ones must be made to suit any special requirements, but the general principles are the same. The straight dolly may be made from a solid bar of mild steel and the cup forged in one end, or it may be made so that the snap or set used in a pneumatic hammer may be placed in the end. The latter is the better method, as the snap having had a machine finish forms a truer head, and having been hardened is less liable to distortion and wear. By changing snaps, this bar does for all sizes of rivets.

Certain advantages are gained by using the holder-on instead of the solid dolly. The action of the machine meeting every blow of the hammer with an opposite force tends to make the rivets tighter; it is self-adjusting, the shortest length being about one foot. For long distances pieces of pipe of various lengths may be attached. The machine greatly lightens the buckers work and speeds up heavy riveting, as the riveter, knowing the other head will be held positively, does not need to hit light blows on the start as he would if the buckers was holding a dolly bar. When using the solid bar the buckers must understand that to release the rivet not only may spoil it, but may be dangerous for

# Everything in Electric Tools

**No. 000 X Duntley Electric Drill.**  
Capacity  $\frac{1}{4}$  inch. Will operate on direct current or single phase alternating current.

**No. 3 S Duntley Electric Drill.**  
Has No. 3 Morse Taper socket, designed for heavy duty. Will operate on direct or alternating current.

**No. 000 Duntley Electric Drill.**  
Capacity  $\frac{1}{4}$  inch. Will operate on direct or single phase alternating current.

**No. 1 S S Duntley Electric Drill.**  
Capacity  $\frac{1}{2}$  inch. Will operate on direct or single phase alternating current.

**Duntley Electric Grinder.**  
Built in two sizes for 5 inch and 8 inch emery wheel. Will operate on direct or alternating current.

**No. 1 Duntley Side Spindle Grinder.**  
Built in three sizes for 4, 5 and 6 inch emery wheel. Will operate interchangeably on direct or single phase alternating current.

**Duntley Portable Surface Grinder.**  
Built in three sizes to operate on direct or alternating current.

**No. 4 Duntley Center Spindle Electric Drill.**  
Will operate on direct current. Has No. 4 Morse Taper Socket.

**Sensitive Drilling Stand for Duntley Electric Drills.**  
Built in five sizes to take standard Duntley electric drills up to  $\frac{1}{2}$  inch capacity.

**Duntley Electric Track Drill.**  
Built for rapid work in rail bending and for drilling and reaming joint holes. Built in three sizes for 600 volts, direct current.

**Duntley Portable Electric Hoist.**  
Built in capacities up to 1 ton. For 110 and 220 volt direct current only.

ASK FOR BULLETINS

## Chicago Pneumatic Tool Co.

1014 Fisher Bldg., Chicago

Branches  
Everywhere

52 Vanderbilt Ave., New York

When writing to advertisers please mention Ideal Power.

him, as the riveter, not expecting the move, may not stop the hammer in time and the flying snap may hit him.

When it is necessary to drive rivets larger than the usual diameters through thick plates, a good job may be obtained with a medium-sized "gun," by bucking up with another gun. This operation is not fast enough to recommend it for regular work, but it will serve the purpose where such conditions are occasionally met.

Upon the judgment used in the selection of pneumatic hammers depends, to a great extent, the output of the riveting gangs. On freight work, of the total number of rivets driven, about one per cent are  $\frac{7}{8}$  in. or over in diameter, and about the same proportion are  $\frac{1}{2}$  in. or smaller in diameter. Under usual conditions, therefore, these extremes may be disregarded when selecting the hammers. Any unusual sizes of rivets can be taken care of by the various expedients as suggested in this paper; but for passenger work, in which there are a great number of small rivets, small hammers should be used, as they use less air and leave fewer marks on the plates, being more easily controlled. The first requirement of the hammer is speed; then come lightness, compactness and simplicity of the parts, resulting in ease and cheapness of repairs. The sets, snaps or dies, as they are variously called, must be very carefully fitted to the hammer if a tapered piston is used, for if there is any play, the piston will hit one side and break.

Carelessness on the part of the riveter may explain some piston troubles. If he lays the hammer down in such a position that the piston rests against the snap when the latter is very hot, the temper of the piston may be drawn. A careful man will not lay his machine down without removing the piston and snap for this reason as well as for safety's sake. Usually the riveter makes far too many rivets before changing snaps, and the snap in consequence is very highly heated. It is taken out of the

gun and left to cool, and when next used it is either very soft and spreads with the heat of the rivet, or it is brittle and breaks. Dies should be changed very frequently, say, every 35 or 40 rivets on  $\frac{3}{4}$ -in. work, and more or less frequently according to the diameter, so that the snap will not reach the tempering point. Instead of allowing them to cool in the air, each riveter should have a bucket of water to cool his snaps in. Where the heat is not high enough for tempering, the action of the water is cooling only, and the snap comes out with the original temper.

Hammer troubles are largely due to foreign matter carried by the air, and although the manufacturers will provide strainers, either in the hammer or the pipe, these are of such fine mesh that they clog up very quickly and there is no easy means of cleaning them, considerable time being required to take out, clean and replace one. The result is that the riveter puts it out of commission before the hammer has been in use very long. If the strainer could be made without these faults it would mean a great reduction in the repair bills. The life of a hammer may be greatly prolonged by following the manufacturer's instructions as to keeping it clean and well oiled.

---

### Mary's Animal Show.

Mary had a little lamb—

'Twas Persian—on her coat;

She also had a mink or two

About her dainty throat;

A bird of paradise, a tern

And Ermine made the hat

That perched at jaunty angle

On her coiffure, largely 'rat.

Her tiny boots were sable topped,

Her gloves were muskrat, too;

Her muff had heads and tails of half

The 'critters in the zoo;

And when she walked abroad, I ween,

She feared no wintry wind;

At keeping warm, 'twas plain to see

She had all nature "SKINNED."



# IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air  
and Electrical Appliances

BY THE

**IDEAL POWER PUBLISHING CO.**  
1014 FISHER BUILDING  
CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. XI

AUGUST, 1915

No. 8

## TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 50 cents per year

## ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our  
subscription list.

### The Little Giant and the Lincoln Highway.

The Lincoln Highway Coast to Coast Caravan is picking its way over the most strenuous portions of its journey.

The latest news we are able to print comes in a telegram from Ely, Nevada, as follows:

"Left Salt Lake City eleventh. Made remarkable run three hundred miles through Fish Springs Utah Summit Nevada to Ely in twenty-six hours, no stop averaging eleven miles per hour ten miles per gallon carrying thirty five hundred pounds elevation Salt Lake forty-one hundred Summit eighty-two hundred Ely six, thousand, some climb. Crossed great American desert. Temperature one twenty in the shade. Truck good shape."

For the benefit of such of our readers as may not know the significance of the Lincoln Highway, we offer the following brief bit of information:

Beginning at New York, this first of transcontinental highways passes through eleven and connects twelve states before it reaches the Golden Gate. So direct is the route that its entire length is but two hundred miles more than the Pennsylvania, the Chicago and Northwestern, the Union Pacific, and that part of the Southern Pacific running from Salt Lake City to San Francisco. Much of the Highway passes through or near places of vivid historic interest. From Trenton, Valley Forge, Gettysburg, to the scenes of Indian fights and savage

massacres along the line of the Western pioneer advance, the Lincoln Highway links together our heroic struggle for independence, our war for national unity, and the bloodstained steps of our emigrant progress from the Mississippi across the plains and mountains to the Western sea. Quite as vital are all of these as Europe's ancient battlefield—far fresher in their appeal to Americans and infinitely fuller of meaning.

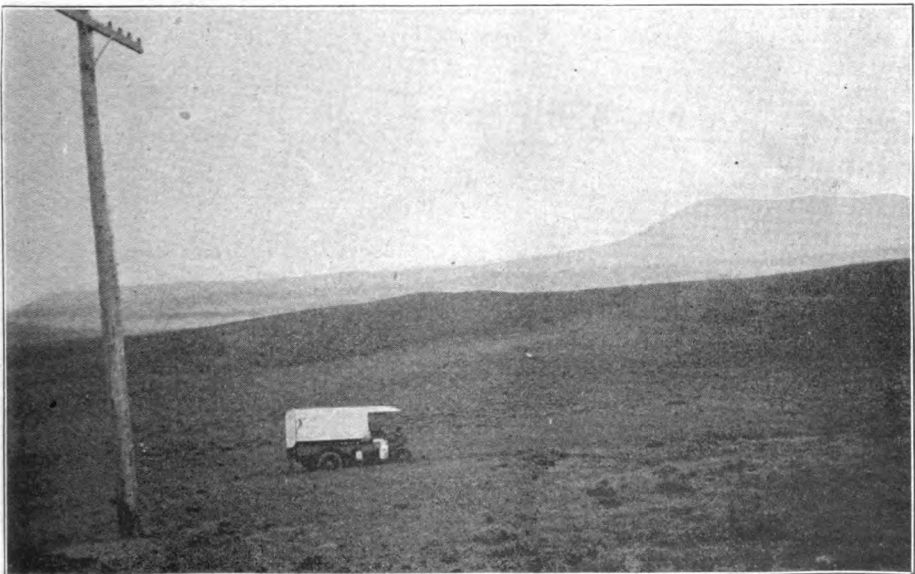
Furthermore, from the branches stretching out on each side of this national highway trunk line one can visit most of the spots where American history at its various periods reached its climaxes.

The originator of the Lincoln Highway idea was a constructive dreamer whose mind, nevertheless, travels on the four wheels of solid fact—Carl G. Fisher, a young business man of Indianapolis. Like tens of thousands of others who find pleasure in long-distance, open-air automobile tours, he ran up against the annoying circumstances of sections of good roads here and there that, speaking by and large, began nowhere and ended nowhere, and of bad and impracticable roads as the general rule. Why not, thought Fisher, build a highway clear across the continent, linking by one continuous roadbed our Atlantic and Pacific seaboards? Why not have one mighty trunk line of commerce and travel?

An organization was incorporated according to the laws of Michigan, with a nonprofit-sharing membership, under the title of the Lincoln Highway Association, with Henry B. Joy as president. Then quickly followed the opening of offices at Detroit, with A. R. Parding-ton, the Association's vice-president and secretary, in detailed executive charge. A personal examination of the various possible routes was made. Mr. Joy, the Association's president, made an automobile tour to the Pacific over one route; Mr. Fisher and a number of business men, in automobiles, examined a different route to the Western Coast.



At "Sherman Hill." Little Giant Lincoln Highway Truck shown at highest point of the Rockies - 8,500 feet above the sea. This is the Continental Divide. At this point the water on the east flows to the Atlantic and on the west to the Pacific Ocean.



Second speed work through sand half way to the axle. Three hours steady pulling without overheating the water. Approaching Rawlins, Wyoming.



Little Giant Lincoln Highway Truck climbing "Sherman Hill"—30 per cent grade.

By personal talk, public meetings, correspondence and in every practical way the people themselves were consulted.

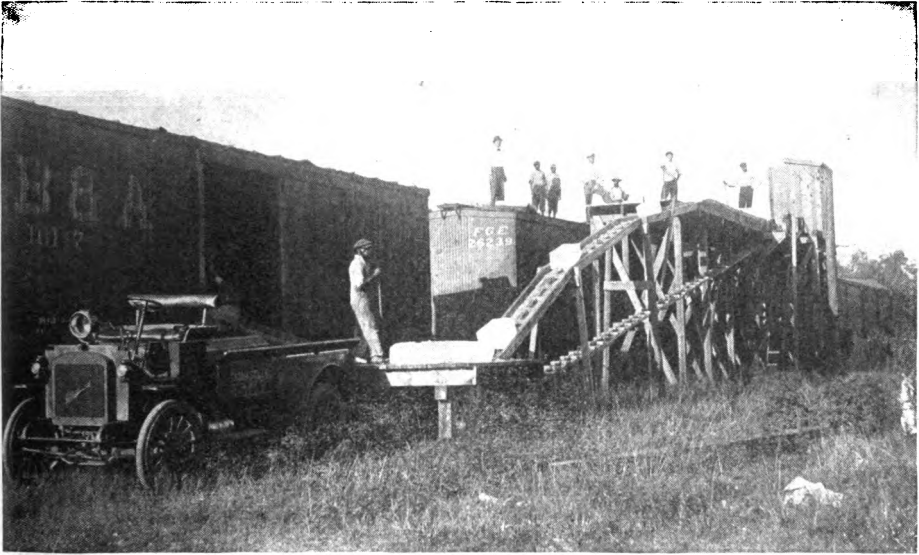
Out of a maze of conflicting views emerged a consensus of opinion favorable to the route finally chosen. It was the shortest and easiest and could be

improved at the least expense.

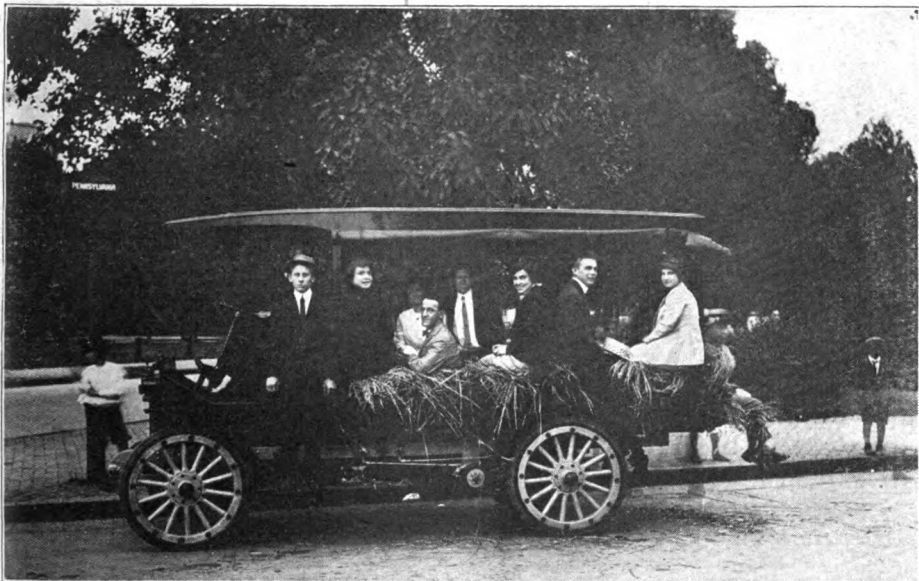
It is over this route that the caravan is now journeying on a tour of inspection, and from the telegram quoted, it would appear that the Little Giant Truck was equal to the severe and unusual demands made upon it.



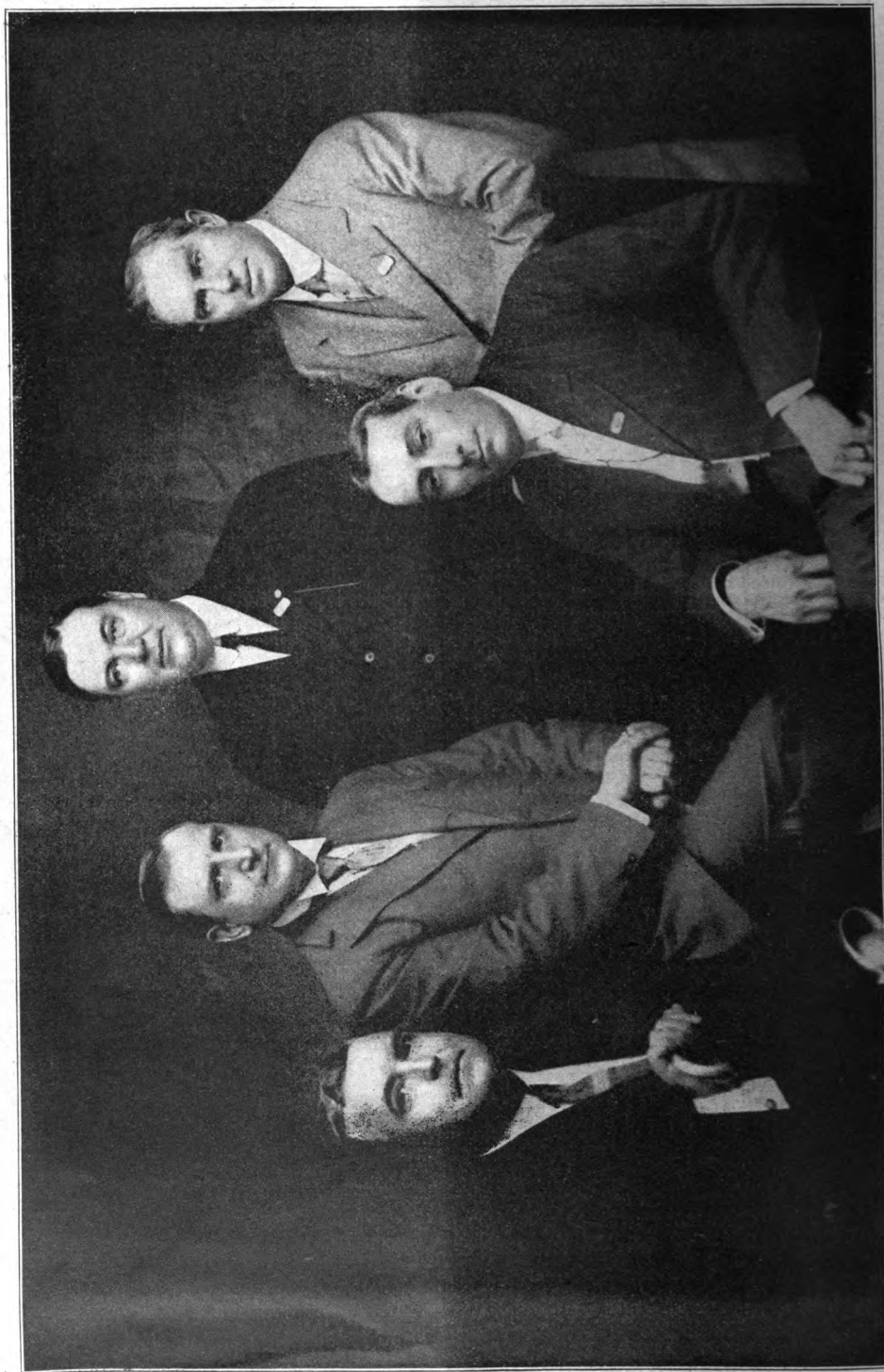
C. W. Stowe in his Little Giant on a camping and hunting trip on the desert near the Los Angeles Aqueduct.



Before the Thomasville Ice and Mfg. Co., Thomasville, Ga., purchased their Little Giant Truck it required three teams to do the work they are now doing with one Little Giant. The cut above shows them engaged in icing cars, the ice being hauled from a point one and one-half miles distant. Owing to the high and constantly increasing values of horses they no doubt received a good price for the three teams they have discarded.



Little Giant "Straw Party," the Latest Thing in Outdoor Sports.



WHO'S WHO IN PNEUMATIC TOOLS.

From left to right: C. E. Walker, Manager Railroad Department; W. B. Seelig, Secretary; W. O. Duntley, President; Thomas Aldcorn, President of the Pneumatic Tool Co., London.



A three-ton bulky load handled easily and conveniently by a Six-Wheeled Little Giant whose normal capacity would be one and one-half tons.

### Yes, the Rear Wheels Absolutely Track.

In the Little Giant Six Wheel Construction, the rear wheels absolutely track and the driver need have no more concern for the movement and guidance of the load than in ordinary four wheel construction.

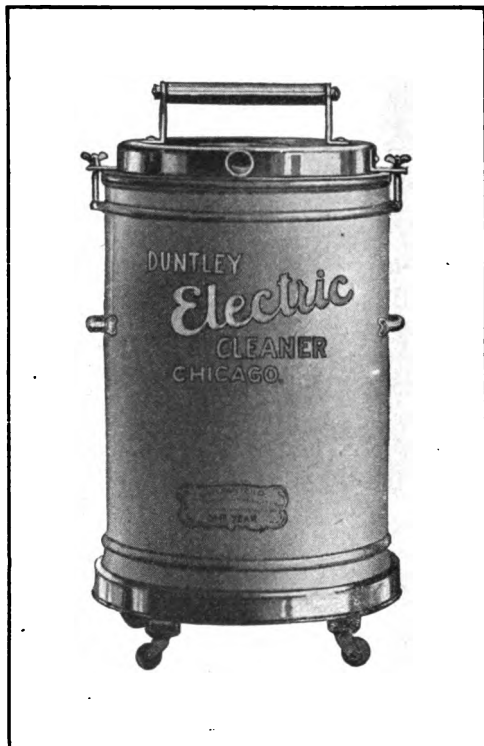
Industries having bulky or long but light loads to transport, frequently fail to realize the expected economies of motor truck transportation owing to the very limited loading space which the ordinary chassis affords. In the ordinary four wheel truck the power is applied through its traction wheels and motor truck practice is to place the entire load or the greater portion of it directly over or slightly forward of the traction wheels. The traction wheels must therefore both carry and push the load.

In the Little Giant Six Wheel Truck these objections are overcome. The power of the motor is utilized to draw the load instead of carrying it and pushing it, with the result that efficiency of

the power unit is doubled. In the Six Wheel construction only sufficient of the load is placed upon the chassis of the truck to secure proper traction. But the weight so imposed is not rigidly fastened to the chassis but rests upon a ball race making it a live or floating load. This feature naturally relieves the running gear and engine from the shock and strain which a load ordinarily transmits to a truck as a result of the constant vibration due to irregularities of roadbed, and also affords relief from strain in starting and stopping. This relief from the shock and strain is so great that the life of the motor is naturally increased and has even been doubled.

The Little Giant Six Wheel Construction is of such a nature that anyone owning a Little Giant truck can purchase the additional outfit with all the apparatus necessary to complete the arrangement and easily apply it, thus making it possible by doubling the load space of the truck to double its carrying capacity.

# Good Management in the Home



is shown by big results without drudgery. Thorough and constant cleanliness of carpets, rugs, draperies and upholstery with least possible time and effort is the ideal of every housewife, and every husband and provider should invest in a

## Duntley Electric Cleaner

and make some woman happy.

The Duntley is made in sizes suitable for use in offices, hotels, churches, theatres, large or small homes, cottages or apartments, and for commercial cleaning.

### AGENTS WANTED

Some Good Territories Still Open

## Duntley Products Sales Company

732 Michigan Ave., CHICAGO

I am in the market for a Duntley Electric Cleaner. Please quote me prices and send descriptive literature.

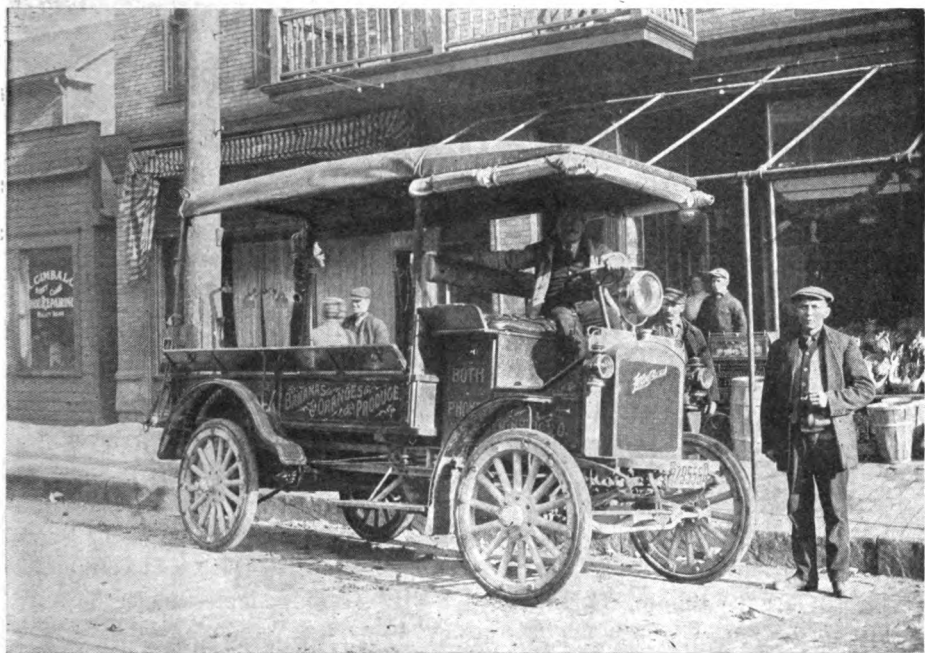
Name .....

Address .....

I am interested in agency proposition for following territory.....

When writing to advertisers please mention Ideal Power.





M. Longo & Co., Mingo Junction, Ohio, purchased a Little Giant Truck some years ago through the local agents, Otte & Pekruhn, and was so pleased with it that he came to Chicago and bought another, a Model H. As further evidence of his confidence in the Little Giant, he induced his cousin, who came to Chicago with him, to purchase a Little Giant, too.

### NATURAL HISTORY

"My husband does nothing but read."

"And mine is always going fishing. If a man isn't a bookworm, he is an angle-worm."

The other day upon the links a distinguished clergyman was playing a closely contested game of golf. He carefully teed up his ball and addressed it with the most approved grace; he raised his driver and hit the ball a tremendous clip, but instead of soaring into the azure it perversely went about twelve feet to the right and then buzzed around in a circle. The clerical gentleman frowned, scowled, pursed up his mouth and bit his lips, but said nothing, and a friend who stood by him said: "Doctor, that is the most profane silence I ever witnessed."

### Poor Hubby.

"You don't mean to say that Dungoon is dead?"

"Yes, sir; and I married his widow."

"Dear me! you don't say so. Poor fellow!"

"Oh, don't be sorry for him, old chap, sympathize with me."

### A COMPROMISE.

"Look here, Hiram," said Si, "When be you goin' to pay me them eight dollars far pasturin' your heifer? I've had her now fer about ten weeks."

"Why, Si, ther critter ain't worth more'n ten dollars."

"Well sposin' I keep her fer what you owe me?"

"Not by a jugful. Tell you what I'll do; keep her two weeks more and you can have her."



# Give Your Customers Boiler Insurance

YOU WON'T HAVE TO WRITE A POLICY. MERELY STATE ON THE INVOICE: *"The flues in this boiler have been expanded with the Little Giant Flue Expanders, operated by Little Giant Flue Rolling Machines, and beaded with a Boyer Beading Hammer; the tapping has been done, and the staybolts have been run in, with Little Giant Reversible Tapping Machines; the STEAM TIGHT RIVETS have been driven by Boyer Hammers."*



**Boyer Riveting Hammer**

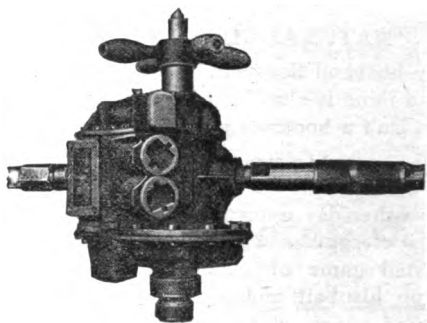
BOYER Riveting Hammers, with the aid of Boyer Holders On, make a specialty of Steam Tight Rivets that DO NOT HAVE TO BE CALKED.

BOYER Chipping Hammers give that steady reliable service day in and day out, that a boiler is expected to give.

BOYER Hammers are subjected to test before shipment, similar to the test you give your boilers, known as our "Power Test." Hammers that do not have the required power or rapidity of blow, and that do not come up to standard in every respect are thrown out. The records of those that pass the test are filed for future reference.

Boilers are tested for the Quantity and Quality of steam generated: for the Horse Power developed; and for the Fuel Consumption required to produce these results.

LITTLE GIANT DRILLS are tested for speed, for their pulling or Horse Power and for Air Consumption. If they do not come up to standard they are rejected. The recent improvements made in these drills made it so easy to pass these tests that we RAISED THE STANDARD, but every LITTLE GIANT DRILL has to "toe the mark."



**No. 2 Improved Little Giant Drill**

*Send for our Pneumatic Tool Bulletins*

## Chicago Pneumatic Tool Co.

**1014 Fisher Building  
Chicago**

**Branches  
Everywhere**

**52 Vanderbilt Ave.  
New York**

When writing to advertisers please mention Ideal Power.

**Surprise in Store.**

The Old Boy: "Tommy, I'm surprised to see you going about with a black eye."

Tommy: "You'll be more surprised when you get home. Your boy has got two!"

**He Would Look a Fool!**

Some years ago an Irish farmer went into an ironmonger's shop to purchase a scythe. After serving him the shopman asked him if he would like to buy a bicycle.

"What is that?" asked the farmer.

"It's a machine to ride about 'the town on."

"And, shure, what might the price be?"

"Ten pounds."

"I'd rather see ten pounds in a cow."

"But what a fool you would look riding about the town on a cow!"

"Shure, now," replied the Irishman, "not half such a fool as I'd look trying to milk a bicycle."

**It's Human.**

Tell a man that there are 270,169,325,-481 stars and he will believe you. But if a sign says "Fresh Paint," he has to make a personal investigation.

**Unpromising.**

A retail dealer in leather goods, doing business in Baltimore, wrote to a firm in Southern Massachusetts ordering a carload of the merchandise. The firm wired him:

"Cannot ship your order until the last consignment is paid for."

"Unable to wait so long," telegraphed the leather merchant. "Cancel the order."

**Experienced.**

Miller: "Just as Millet and the widow started up the aisle to the altar every light in the church went out."

Mumford: "What did the couple do then?"

Miller: "Kept on going. The widow knew the way."

Court (to prosecutor)—Then you recognize this handkerchief as the one which was stolen?

Prosecutor—Yes, your honor.

Court—And yet it isn't the only handkerchief of the sort in the world. See, this one I have in my pocket is exactly like it.

Prosecutor—Very likely, your honor: there were two stolen.

**A Code System.**

"Now, Silas," said the speaker, "I want you to be present when I deliver this speech." "Yassuh." "I want you to start the laughter and applause. Every time I take a drink of water, you applaud, and every time I wipes my forehead with my handkerchief, you laugh." "You better switch dem signals, boss. It's a heap mo' liable to make me laugh to see you standin' up dar deliberately takin' a drink o' water."

**Getting Him Started.**

"Well, George," said a Georgia man not long ago to an old negro in his employ, relates the Chicago Herald. "I understand that you intend to give your son an education."

"Dat's my intention, suh," responded George. "I know myself what 'tis to struggle along widout learnin', an' I has determined my son ain't goin' to have no sich trouble as I's had."

"Is your son learning rapidly?"

"He shore is, sah. Las' week he done wrote a lettah to his aunt what lives more'n twenty miles from yerc, an' aft-while he's goin' to write to his aunt dat lives 'bout fifty miles from yere."

"Why doesn't he write to that aunt now?" smilingly asked his employer.

"He kain't write so fur yit, sah, He kin write twenty miles fust rate, but I tole him not to try fifty miles 'til he gits strongah wif his pen."



# Short Strokes

The dollar mark is a sign of wealth.

A dry grin is usually better than two liquid smiles.

When a man has "wheels" he thinks he is the whole machine.

And many a man has discovered that he is married to his boss.

What does it avail a woman to have troubles if she can't tell them?

Customs inspectors are patriotic. They always go where duty calls them.

Sometimes a man's friends will neither make him a loan nor let him alone.

Only a smart man can conceal the fact that he considers himself important.

Don't jeer, it's a game two can play at.

Many a man who is well off is well on in years.

It doesn't take a good looker long to find a husband.

The man who is always celebrating isn't necessarily celebrated.

Many a woman without brains is able to fool a male highbrow.

No candidate is as radical in office as he was during the campaign.

People would rather listen to a bank account than a hard luck story.

Anything that makes a noise like a meal ticket attracts a lot of attention.

Nothing makes a man feel so important as his ability to answer the questions of a small boy.

And many a man in this world expects his friends to do more for him than he is willing to do for himself.

Rather than make an effort to reach the top, some men remain at the bottom and help to pull others down.

If there was any romance connected with it, a girl would sew on her own buttons instead of letting her mother do it.

Some husbands look as if their wives had got them in exchange for trading stamps.

And the man who has all his property in his wife's name can't even call his soul his own.

A man is never so poor that he isn't able to find some woman who is willing to share his poverty.

It is almost impossible for a woman to drive a nail, yet she is usually an expert with the hammer.

A well known lecturer recently married a suffragette and retired from the platform. Now he knows how it feels to be the audience.

It is our belief that a man has just as much right to spend his hard earned money for cigars as his wife has to spend it for face bleach.

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# IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Truck  
By THE IDEAL POWER PUBLISHING COMPANY  
Fisher Building, Chicago

VOL. XI

SEPTEMBER, 1915

No. 9

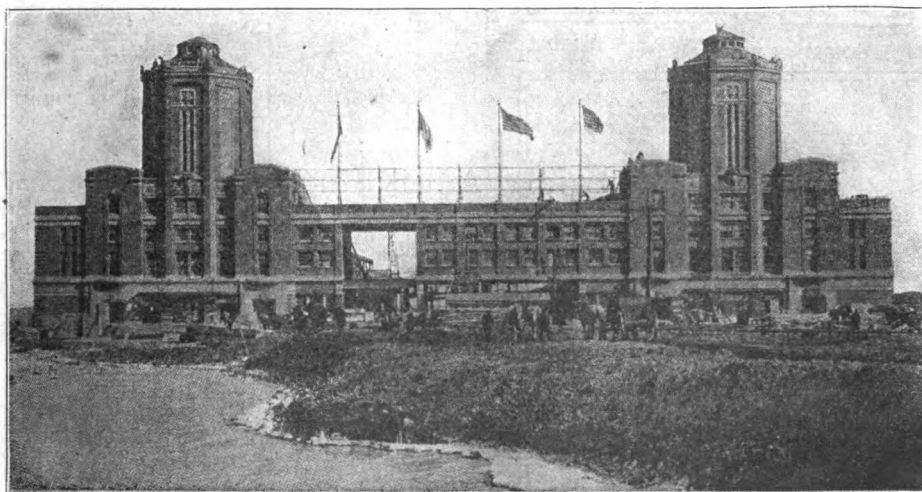
## Longest Municipal Pier in the United States is Nearing Completion at Chicago

Structure, 3,000 by 290 Feet, Provides Separate Passenger and Freight Facilities with 660-Foot Recreation Building at Outer End

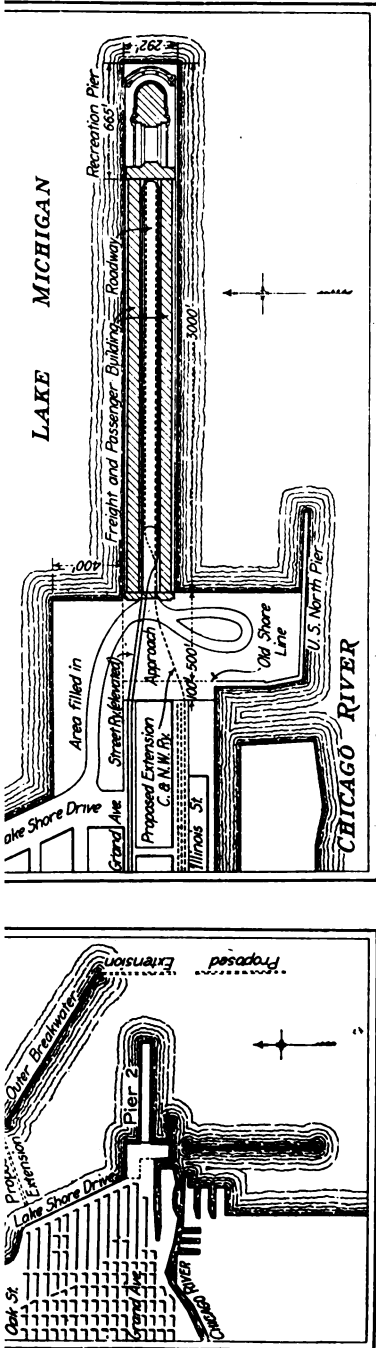
Chicago will soon possess the longest municipal pier in this country. It will be devoted to freight and passenger traffic and recreation. The head house and the freight and passenger buildings are nearly completed and the contract has recently been let for the recreation building. The pier is located 700 feet north of the Chicago river and is No. 2 in the comprehensive outer-harbor plan which Chicago has under way to rehabilitate its fast disappearing lake traffic, says the Engineering Record.

The pier proper is 3,000 feet long and

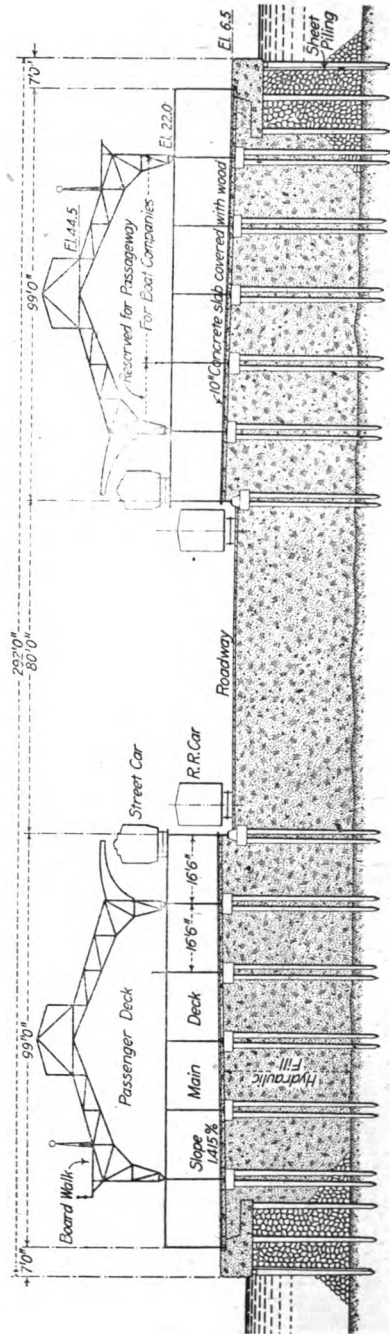
292 feet wide and has for an approach a plaza of approximately 21 acres which were reclaimed from the lake and will be used in the future for commercial purposes in connection with further developments of the comprehensive harbor. The head house is immediately west of the freight sheds, while the extreme easterly, or lakeward, 660 feet of the pier is devoted exclusively to recreation purposes, this being the first application of the recreation-pier idea in Chicago.



Head House is flanked at either end by a massive, octagonal tower.



PIER, LOCATED JUST NORTH OF CHICAGO RIVER, IS 3000 FEET LONG—OUTER END GIVEN OVER TO RECREATION PURPOSES



GENERAL CROSS-SECTION OF ENTIRE PIER—TWO MAIN DOUBLE-DECK PIER SHEDS WITH ROADWAY AND TRACKS BETWEEN

### Substructure.

The dock walls consist of three rows of round piles from 50 to 60 ft. long with the outside row supporting Wakefield sheeting. The space between the rows of piles is filled with stone to about 1 ft. below datum (this being approximately the water surface), and on top of this stone fill is built the concrete cap to El. 6.5. The area 256 ft. wide between the dock walls is filled with earth, the greater part of which was deposited by means of an hydraulic dredge working from 200 to 700 ft. from the pier. A large part of the stone was obtained from the spoil banks of the Chicago Drainage Canal and was brought by barges to the site in boxes of  $3\frac{1}{2}$ -yd. capacity.

The construction of the docks is typical of the Chicago district except that the 12 x 15-in. sheet piling is heavier than used elsewhere, and that the tie rods, or anchorage, were placed  $2\frac{1}{2}$  ft. below the water surface. Reinforced-concrete mud sills, 9 x 9 in. in cross-section, were used in place of the usual timber sill. The two outside rows of piles are spaced on 4-ft. centers, while the back row is spaced on 2-ft. centers. Anchor piles in the approach were driven on 8-ft. centers, 30 ft. from the back row.

The inside row was carried ahead of the other two rows, while another pile driver carried along the center and outside rows. The anchor rods for the center and back rows were set at their proper position, after which the front row of piles was lined up and held with temporary anchors. As soon as the sheet piling was driven the permanent anchors were set and the space between the piles filled with stone.

The concrete cap was poured in place in alternate blocks 30 ft. long. All the material was brought to the work on scows and mixed in a floating tower equipment. The amount of concrete placed depended a great deal on the condition of the lake, a slight swell cutting

down the yardage per day materially. On calm days as much as 420 cu. yd., or 120 lin. ft. of the dock, were placed with one mixer.

As it was contemplated to rush the entire work to completion in the shortest space of time possible, the commission decided to carry the superstructure entirely independent of the earth fill, hence pile foundations were designed for all the buildings. It is believed that all known records for speed were broken on this construction, as more than 17,000 piles were driven,  $1\frac{1}{4}$  mi. of concrete dock were constructed and upward of 1,000,000 cu. yd. of earth fill were placed in a period of nine months.

### Water Tanks in Head House.

The head house facing the plaza is a steel structure faced with brick, stone and terra cotta, with an ornamental tower near each end. These towers each contain a 60,000-gal. steel tank to supply the sprinkler system in the freight sheds.

As noted in one of the drawings, the 80-ft. roadway passes between the buildings at the ground-floor level, while the street cars are carried across the plaza on an inclined trestle and pass through the head house and between the other buildings at the second-floor level. Space is reserved for two switch tracks on each side of the roadway. A wide ramp on each side of the roadway leads from the lower level of the head house to the second floor, which is at the same level as the passenger-deck floor of the pier. Access to the upper floors is obtained by means of wide stairways. The heating plant and sprinkler supply pumps are located in rooms on the ground floor, while the rooms above will be devoted to administration offices, toilets and a women's rest room. The vestibule and hallways are wainscoted with white enamel brick to a height of 8 ft., and above this level the walls are plastered. The building is entirely fireproof.

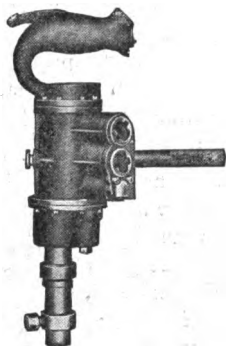
### Freight and Passenger Traffic Will Be Separated.

The two freight and passenger build-



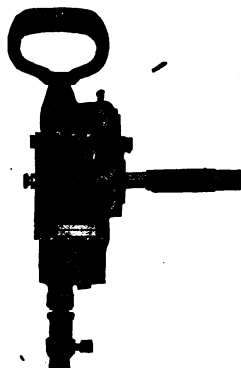
# Boring Wood With Air

In a pneumatic wood boring machine the object is to get minimum weight in a reversible air motor that will successfully handle the standard wood boring bits that are now on the market.

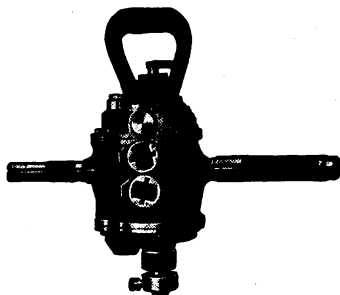


No. 10 S Little Giant  
Wood Boring Machine,  
Capacity  $\frac{1}{4}$  in.

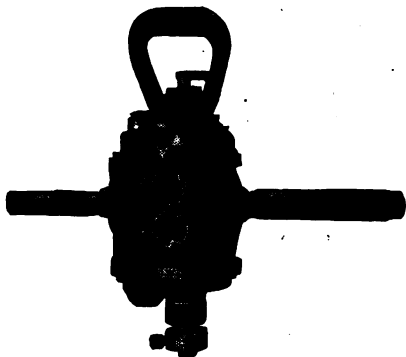
**Little Giant  
Wood Boring  
Machines  
Meet These  
Conditions**



No. 9 Improved Little Giant  
Wood Boring Machine,  
Capacity 1 in.



No. 5 Improved Little Giant Reversible  
Wood Boring Machine,  
Capacity 2 in.



No. 14 Improved Little Giant Reversible  
Wood Boring Machine,  
Capacity 4 in.

**Bulletin 127 tells all about these.**

## CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Building  
CHICAGO

BRANCHES EVERYWHERE

52 Vanderbilt Ave.  
NEW YORK

When writing to advertisers please mention Ideal Power.

ings are each 100 ft. wide and 2,340 ft. long.

The first-floor beams and slab are of reinforced concrete, while the columns, girders and floorbeams of the second floor are of steel completely fireproofed. The second floor is a reinforced-concrete slab, crowned in the center so as to be easily cleaned by flushing. The wearing surface for the freight dock is creosoted block. The reinforced-concrete roof, covered by five-ply composition roofing, is carried by a three-hinged arch surmounted by a monitor. An 8-ft. board-walk extends along the water side of each truss from the head house on the west to the terminal building on the east. The live loads assumed are 250 lb. per square foot on the first floor, 200 lb. on the passenger deck, 100 lb. on the board walk and 25 lb. on the roof and monitor.

The first floor is to be devoted exclusively to freight, while the second floor will be reserved for passengers who will pass from the main deck of the boats to the street cars, or vice versa, without climbing any stairs. The street-car operation will all be "single-track one way."

Practically the whole upper half of the side walls is of wire glass set in steel sash, thus doing away with insufficiency of light, a common fault of most freight sheds. The sliding steel doors at the freight level are so arranged that one or more can be opened at a time, thus giving practically any amount of clear opening. The doors of the passenger deck are arranged so as to give a 10-ft. clear opening in each bay.

#### Slabs Deposited Through Roof.

Concrete in the foundations, girders and first-floor slab was deposited at one operation from a traveling tower outfit set up in the main roadway. Two spouts were maintained, one for each building. For the upper floor the spouts were supported on a large platform mounted to operate longitudinally on the roof. A small trestle was mounted on the

platform to run transversely to cover a length of 250 ft. from each setting. Inside the building the concrete was distributed by another rotating chute. The concrete roof slabs were made on the ground and hoisted into place.

#### Industrial Track.

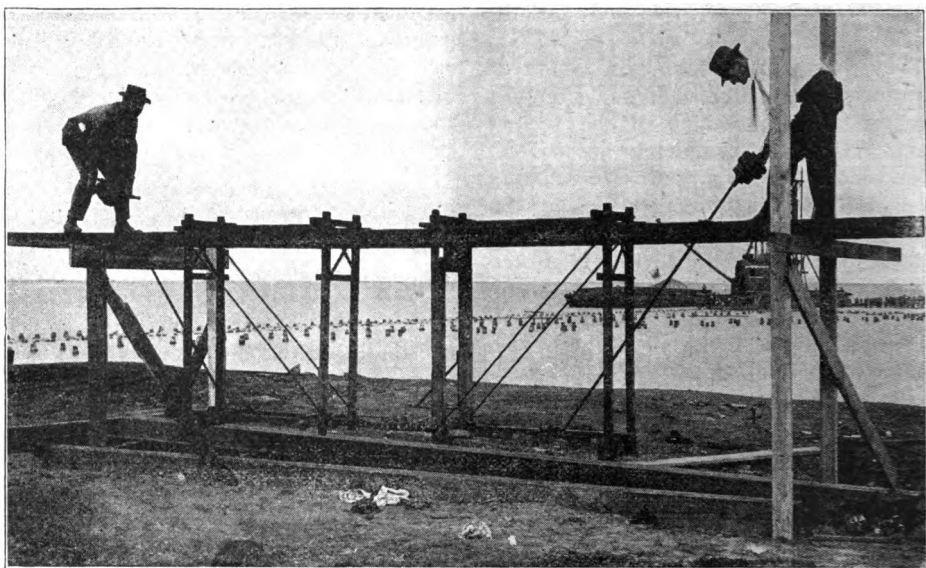
Aggregate for the concrete was delivered in 2-yd. dump cars over an industrial track laid to a sand loading plant on a dock about 1,000 ft. distant, and to standard-gage cars loaded with gravel in Illinois street. The tracks from these two points came together at the very end of Illinois street, and the dinky hauled to the concrete plant the number of sand and gravel cars proportionate to the mixture being used. The cars were unloaded into the elevator boot, the train being pulled along one car-length at a time by a rope drive from a crab on the hoisting engine. The same spotting procedure was used at the sand loading plant. By using these crabs only one dinky was required. When placing the 10-in. slab and heavy girders, from 200 to 300 cu. yd. could be deposited in an eight-hour shift, but from 150 to 180 cu. yd. only could be placed in the 5-in. slab.

Erection of the steelwork was carried out by means of mounted erectors operating 45-ft. booms with a three-drum hoisting engine. The erection of three bays of steel was an ordinary day's work for each erector.

Work has only begun on the recreation building, but the contract calls for completion by Sept. 15th. The three-story structure is 50 x 280 ft. in floor plan and will have a 32 x 280-ft. refectory, an emergency hospital and an auditorium with 4,000 seats removable so that the floor can be used for dancing.

#### Personnel.

The Great Lakes Dredge & Dock Company was the contractor for the piling, concrete dock and earth filling for both the pier and approach. The Kettler-Elliott Erection Company has the contract for the street railway tres-



Device used for boring slanting holes for anchor rods under water in constructing the Municipal Pier. Little Giant wood boring machines were used.

tle and the Chaney-Archibald Company built the head house. Edward L. Scheidenhelm is the general contractor for the freight and passenger buildings. The John Griffiths & Son Company holds the contract for the terminal building and Paschen Brothers & Company will construct the recreation buildings.

The design of the substructure was made under the direction of the Harbor & Subway Commission, originally composed of John Ericson, city engineer, J. J. Reynolds and E. C. Shankland. About a year ago the first two of these resigned and were succeeded by the city comptroller and the commissioner of public works. The design for the buildings was carried out under the immediate direction of E. C. Shankland. William Artingstall, harbor engineer, has direct charge of the work and Charles S. Frost is the architect for the commission.

#### Tools Used.

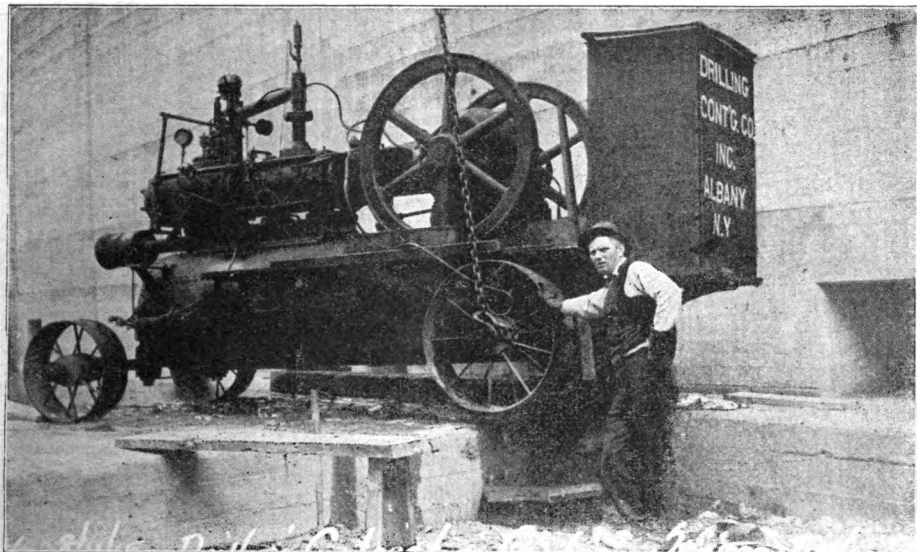
Boyer Hammers and Little Giant Drills have made it possible to construct the Municipal Pier in record-breaking time. Some of the problems confronted

were unique, such as boring slanting holes for anchor rods under water from an oscillating raft. The device used for this purpose consisted of a timber frame, hung at a correct line and grade from two guide-planks. The augers used were driven with Little Giant Wood Boring Machines, made by the Chicago Pneumatic Tool Co. Operators are shown in the photograph standing on the frame to bore the holes, but this was not always done in rough weather. Above the guide blocks the long auger shanks are fitted with a universal joint, so that men could stand on an oscillating raft and keep the machines going even when the waves were quite high. The rods were inserted by men in rubber suits standing on a submerged raft. This was easy because of the accurate boring possible with the frame.

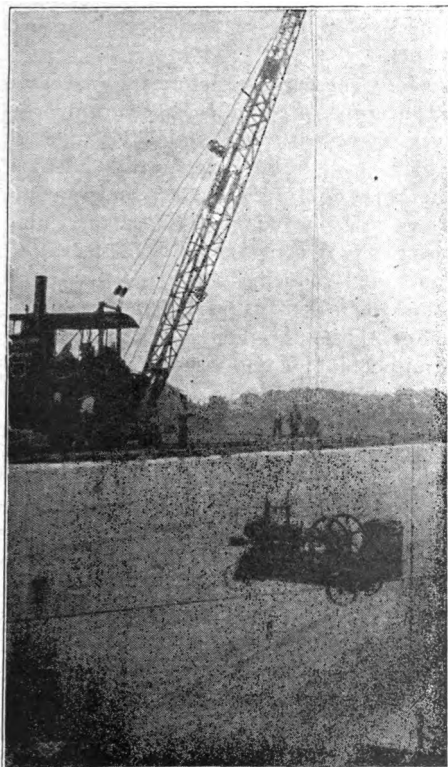
#### Sounds Nearly Right.

Husband—Is this butter perfectly fresh?

Wife—The dealer told me it was just from the crematory.



A Chicago Pneumatic Portable Compressor operated by the Drilling Contracting Co., Albany, N. Y., in the construction of the Cayuga & Seneca Canal.



Lifting the Compressor with a Browning Crane from Lock No. 3, Cayuga & Seneca Canal.

### How the Portable Compressor Meets Engineering Conditions.

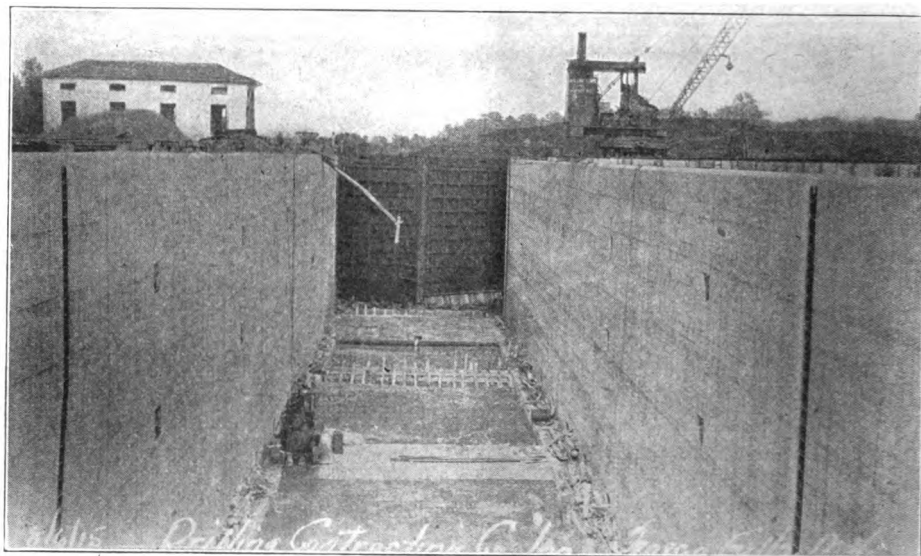
That "Chicago Pneumatic" portable air compressors are continuing to earn well-merited favor and keeping up their enviable reputation for service and efficiency is testified to by the Drilling Contracting Co., of 35 State street, Albany, N. Y., who have kindly sent in some photographs of recent lock building and construction operations, together with the following warm letter of indorsement which they have permitted us to publish:

"We have had it in mind for some time past to write you a letter about the splendid service we have been getting from your 150-ft. Portable Compressor.

"Many well informed persons and engineers have congratulated us on the performance of this machine and have stated that it was the best running and the least troublesome gasoline machine that they had ever seen.

"We have run this machine steadily, at times working twenty-four hours per day, with a ten-minute stop only once in twenty-four hours to examine the journals and wrist pin connections.

As to the portability of this machine an examination of a map of the New York State Barge Canal may interest



Chicago Pneumatic Portable Gasoline Compressor in No. 3 Lock, Cayuga & Seneca Canal.

you when we explain that this machine has been on cars only four times and it has been set up on all of the eight locks below Ft. Edward on the Champlain Canal, on all twenty-two locks of the Erie Canal between Waterford and Oneida Lake; on locks at Fulton, Minnetto and Oswego of the Oswego Canal, and is now working on the four locks on the Cayuga & Seneca Canal.

"The transportation and setting up of this plant has become so much a matter of routine with us that it has been a common occurrence for us to have our drills running fifteen minutes after drawing the compressor to a new site.

"The enclosed photographs show our Browning Crane lifting the Compressor from Lock 3, Cayuga & Seneca Canal, which is one of the four locks on this canal which we are equipping with machinery, gates, etc., at the present time.

"Yours truly.

"DRILLING CONTRACTING CO.,  
"Per C. Livingston Riker, Pres."

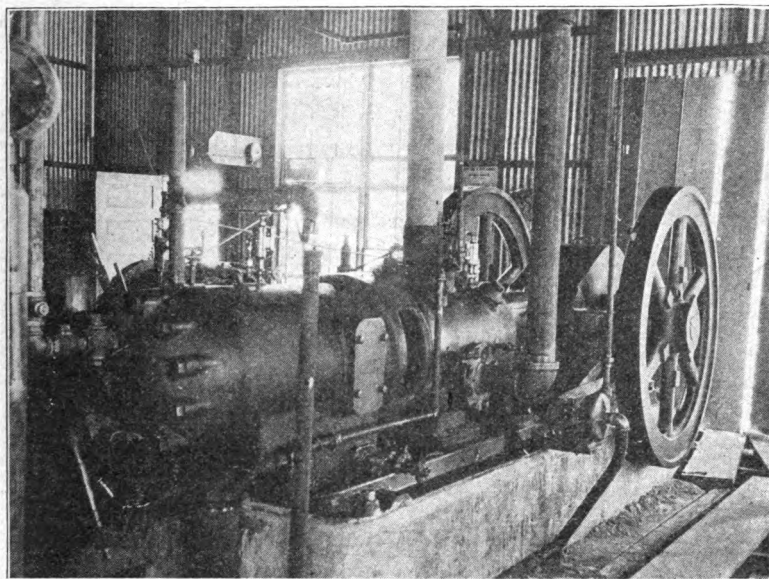
The original and logical design of the Chicago Pneumatic portable tank mounted outfit, in which the combined air receiver and water tank form the support for the compressor, enables the production of a unit possessing a low center of gravity, short wheel base, minimum weight, large air storage capacity and

accessibility for inspection or adjustments.

Close regulation is effectually secured by means of a combined speed and pressure governor and unloading device which, together automatically perform the three-fold function of limiting the speed of the compressor, maintaining practically a constant air pressure at all times and reducing the load to a minimum when there is no demand for air.

For these portable, and also for the semi-portable, compressors there is provided when desired a simple and highly efficient jacket water cooling system, thus making the machines entirely independent of an external source of water supply. This system includes a cooling tower, to the top of which the hot water from the air and gas cylinder jackets is pumped and through which a forced air circulation is maintained by a positive belt driven fan of large capacity. A constant circulation of water is assured while the compressor is in operation by a reliable plunger pump actuated by the air inlet valve eccentric.

Mr. Riker's letter quoted above re-



A Chicago Pneumatic 14-inch N-SO Fuel Oil Compressor installed at the Tonopah Consolidated Mining Co., Tonopah, Nevada. This machine is run  $6\frac{1}{2}$  hours per shift on 15 gallons of 28° gravity distillate, operating at an altitude of about 6,300 feet and carrying a receiver pressure of about 90 pounds.

minds us of the slogan of the Chicago Pneumatic Portable Compressor "Here Today, There Tomorrow and on the job all the time," and proved that the slogan is well chosen.

#### Situations Wanted.

Practical engineer would like to connect with some large electric railway in the capacity of superintendent of machinery or roadmaster. Has had seven years practical experience with some of the largest electric railways in the West and can furnish references. Has had experience with practically all makes of track and roadway machinery, including Duntley Electric Track Tools. Can handle men. Address Ad-12, Ideal Power.

A mechanical engineer, graduate of the Mass. Inst. of Tech., Boston, class of 1897, wants position as superintendent or works manager in a plant manufacturing iron or steel products. Has had 17 years experience in shop management and is competent to take charge of any

shop, having such departments as boiler, foundry and forge. Address Ad-13, Ideal Power.

#### Had a Soft Snap.

During the severe weather of last winter Mike and Dennis applied for work at ice harvesting.

"Did you ever cut any ice?" said the man in charge.

"Did we?" said Mike, "sure, ask anyone out around the stock yards and they'll tell ye we're the boys that cut some ice."

"I don't mean that way," said the man, "but I guess you'll do. Take this" (handing them a crosscut saw) "and go out to where you see the crowd on the lake."

"This is a soft snap we have, Dinny," said Mike as they strolled along. "Three dollars a day and we don't know what we're going to do."

"I know what we're going to do all right," said Dennis, "but what I'm wondering is which one of us is going to get at the bottom end of the saw."

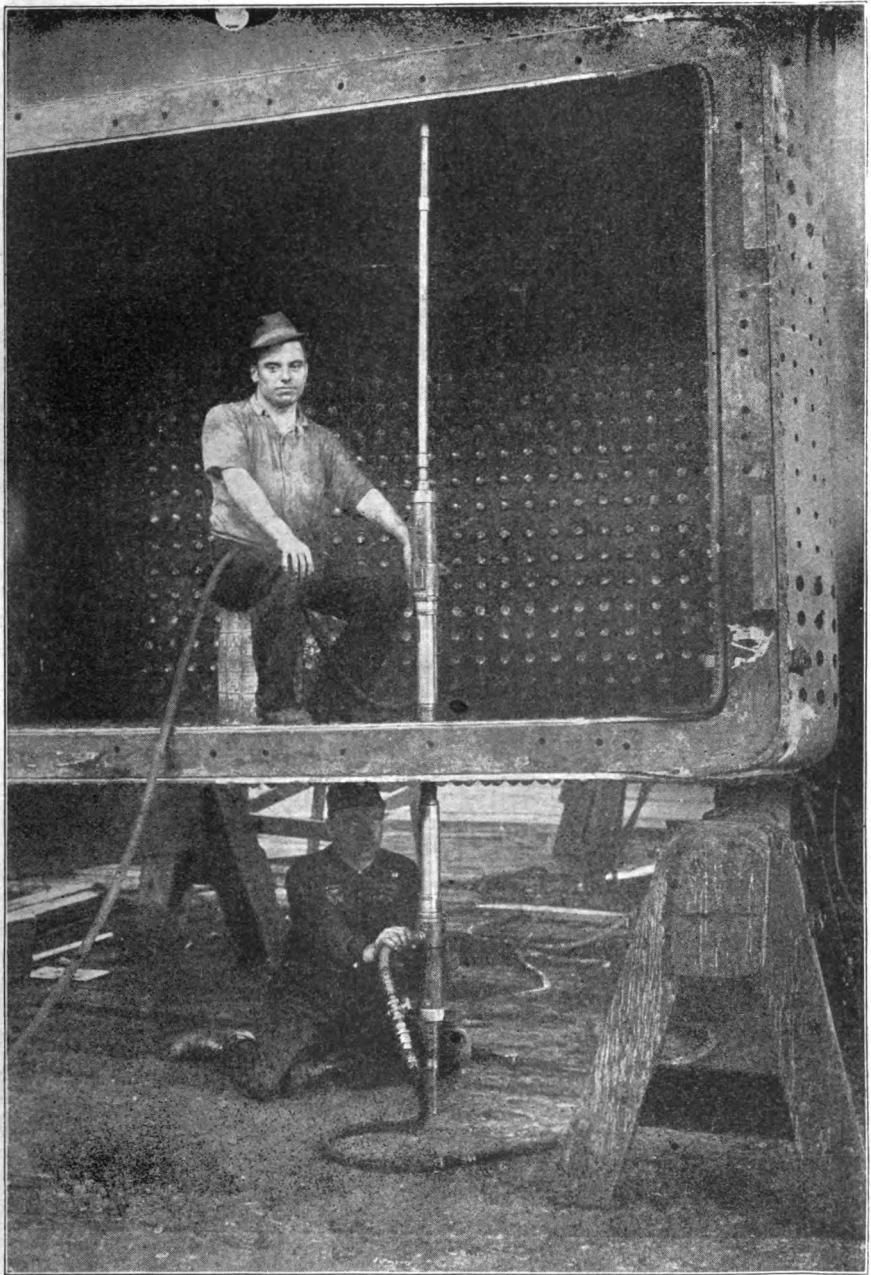


The above illustration shows a "Chicago Pneumatic" Truck Mounted Gasoline Driven Air Compressor operating two "Hummer" Hammer Drills on a recent excavation job at 157th Street and St. Nicholas Avenue, New York City. Amana & Lyons of New York City were the contractors. In the immediate background appears one of the large apartment houses with which this uptown section of the city has been built up.



Showing a "Chicago Pneumatic" Gasoline Driven Air Compressor operating three Keller Valveless Rock Drills. A plant recently purchased by the Public Works Department, Adelaide, South Australia, through Henry W. Peabody & Co., of Sydney—the Australian agents for the Chicago Pneumatic Tool Company.





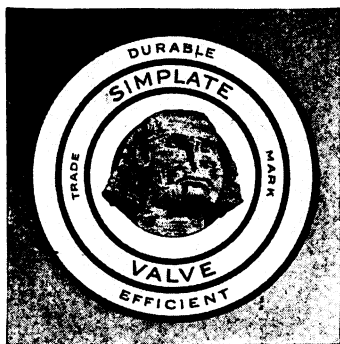
Showing use of No. 80 Boyer Staybolt Riveter in railroad shop. Driving both ends of staybolt at the same time.

With a capacity of one staybolt every five seconds, the No. 80 Boyer Staybolt Riveter makes it possible to speed up on this class of work and many previous records have been broken in shops where it is used.

Standard staybolts run from  $\frac{3}{4}$ " to  $1\frac{1}{4}$ " in diameter, but excellent work has been done by the No. 80 Boyer on staybolts as large as  $1\frac{1}{2}$ " and  $1\frac{3}{4}$ ".

Prices will be supplied on request.





# SIMPLATE DISC VALVES

are used in

**"Chicago Pneumatic"  
Compressors**

**Durable — Efficient — Noiseless**

Send for Bulletin 213, giving  
full details

**CHICAGO PNEUMATIC TOOL CO.**

**1014 Fisher Building, Chicago**

**Branches  
Everywhere**

**52 Vanderbilt Ave., New York**

INNER VALVE  
ENTIRELY  
SEPARATE  
AND  
INDEPENDENT  
OF INTERMEDIATE &  
OUTER VALVE

LARGE PORTS IN  
VALVE KEEPER  
MINIMUM RE-  
STRICTION TO  
THE FLOW OF  
THE AIR FROM  
VALVE



METHOD OF GUIDING

VALVE STUD  
NUT-A-L-A-M  
STANDARD —  
WITH SPLIT  
PIN COMPLETES  
A RIGID CON-  
STRUCTION

VALVE KEEPER  
OF SPECIAL MAT-  
ERIAL HAVING  
SUPERIOR WEAR-  
ING QUALITIES  
AND HIGH TENSILE  
STRENGTH

## SIMPLATE

INTERMEDIATE VALVE  
ENTIRELY  
SEPARATE  
AND  
INDEPENDENT  
OF INNER AND  
OUTER VALVE

OPENINGS OVER  
SPRING RECESS  
INSURE CLEAN  
SPRING POCKETS  
NO TENDENCY  
FOR CARBON DE-  
POSIT ON SPRING

OUTER VALVE  
ENTIRELY  
SEPARATE  
AND  
INDEPENDENT  
OF INTERMEDIATE &  
INNER VALVE

VOLUTE SPRING  
OF CRUCIBLE-  
STEEL - DRAWN  
AT PROPER TEM-  
PERATURE AND  
SUBJECTED TO  
RIGID COMPRES-  
SION TESTS

NARROW SEAT  
INSURES A  
TIGHT JOINT  
IN AIR CYLINDER  
WITHOUT THE  
USE OF GASKETS

VALVE SEAT  
OF SPECIAL  
METAL-HAVING  
SUPERIOR WEAR-  
ING QUALITIES  
AND HIGH TEN-  
SILE STRENGTH

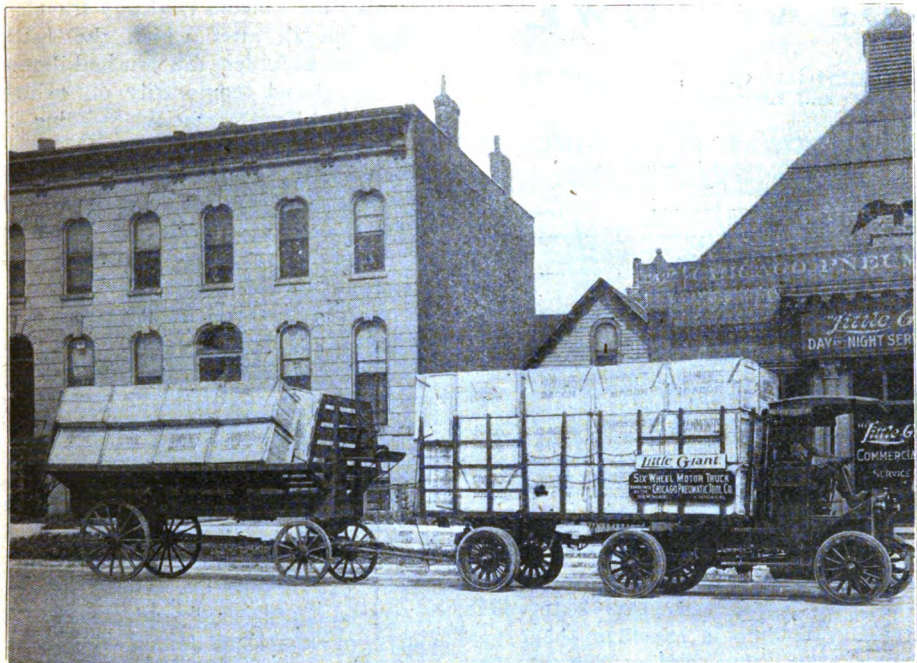
VALVE STUD  
OF NICKEL STEEL  
PRESS FIT IN  
VALVE SEAT IN-  
SURING TIGHT-  
NESS AND EASE  
OF ASSEMBLING

LARGE FREE  
AREA THROUGH  
PORTS IN THE  
VALVE SEAT  
RESISTANCE TO  
THE FLOW OF  
AIR IS SLIGHT

THREE GUIDES  
FOR EACH VALVE  
WITH PROPER  
FIT TO PREVENT  
VALVE COCKING  
OR OTHERWISE  
FAILING TO SEAT

**Advantageous Features of Simplate Valves**

When writing to advertisers please mention Ideal Power.



Demonstrating the tractive power of the Little Giant Six-Wheel Truck.

#### What the Six Wheel Truck With Additional Trailer Demonstrates.

In ordinary four wheel truck construction, the power is applied through the traction wheels, over which the greater portion of the load is placed. The traction wheels, therefore, both carry and push the load. The success of the Six Wheel Little Giant is demonstrated by the ease with which the ordinary Little Giant power unit will pull twice the normal load when only sufficient of the load is placed over the driving wheels to secure traction. As further evidence of this, an ordinary wagon loaded to its limit, was attached to the rear of the Six Wheel Little Giant—itsself loaded to the guards—and the entire outfit—practically three times the capacity of the ordinary truck—was handled easily. While this combination of Six Wheel Truck with additional trailer may not be practical nor adapted to ordinary conditions it demonstrates the great tractive power of the Little Giant power unit and

shows that even with the added capacity of the larger Six Wheel Body, there is still a larger reserve of power on which to depend.

#### Punishment Fitted Crime.

A boy with an air of melancholy resignation went to his teacher and handed in the following note from his mother:

"Dear Sir: Please excuse James for not being present yesterday. He played truant, but you needn't whip him for it, as the boy he played truant with got mad at him and licked him, and a man they threw stones at caught him and licked him, and the driver of a cart they hung on licked him, and the owner of a dog they chased licked him. Then I licked him when he came home; after that his father licked him with a piece of rope and I had to lick him again for being impudent to me for telling his father. So you need not lick him till next time. He thinks he will attend regular in future."

# IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air  
and Electrical Appliances

BY THE

IDEAL POWER PUBLISHING CO.

1014 FISHER BUILDING

CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. XI SEPTEMBER, 1915 No. 9

## TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 50 cents per year

## ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our  
subscription list.

### How the Little Giant Made the Lincoln Highway Trip.

Well, the Little Giant Truck, the official Truck of the Lincoln Highway Coast-to-Coast Caravan along with the rest of the party, reached its destination at San Francisco in excellent shape on August 25th, thus ending one of the most strenuous trips ever undertaken by a motor truck. The Lincoln Highway is a beautiful thing and to the everyday auto fan brings up visions of a delightful journey—of picturesque mountain scenery—of interesting halts by the way, and other refreshing sensations which only an autoist can know and appreciate. But when a well-loaded truck finds it its business to keep up with a flock of speedy pleasure cars bent on making San Francisco by a certain day and a certain hour, well—ask Leroy Beardsley and Earle Phillips, who drove the truck from Chicago to the coast and who had the pleasure of reporting at the Panama-Pacific Exposition at 3 o'clock, "on time," on the day appointed. But the Little Giant made it and did it like a Trojan and incidentally covered itself with glory.

On the arrival of the caravan at Oakland, the Commercial Club of that city gave the party a luncheon, which, after the long drive over the deserts, was thoroughly appreciated. When the Exposition was reached, President Moore

presented the Lincoln Highway travelers with a medal, after which the Little Giant was accorded the unusual honor of being placed temporarily on exhibition in the Transportation Building of the Fair.

The Little Giant had now accomplished all that it had set out to do, but, as there were possibilities of obtaining more laurels, a record run from San Francisco to Los Angeles was undertaken. The distance is 492 miles over continuous mountain roads, and this they made in 29 hours, 30 minutes running time; thus averaging 16½ miles per hour. The most remarkable feature of this record trip was the low cost of operation, which totaled \$4.26 or less than one cent per mile. This was due in part to the cheap grade of fuel used, ordinary distillate, and only six (6) gallons of that. Four (4) gallons of Motoreze lubricating oil and seven (7) quarts of water made up the other items.

### The Military Training Camp at Fort Sheridan.

A Military Training Camp for business and professional men, to which the Little Giant Truck reported for duty on September 17th, will be held on the military reservation, Fort Sheridan, Illinois, during the period Sept. 20th to Oct. 17th, 1915, inclusive.

The camp will be held under the direct supervision of officers of the United States Army.

The purpose of the camp is to offer an opportunity for business and professional men of military age to qualify themselves for efficient service to the country in case of need.

Attendance at the camp will not increase either the legal or moral obligations of those who attend. The intention is merely to equip those taking the course of training to fulfill with more efficiency and usefulness obligations which are already laid upon them as citizens of the United States.

The success of the Young Men's Sum-



#### A LITTLE GIANT VOLUNTEER

The Chicago Pneumatic Tool Company's contribution to the Military Training Camp which opens at Fort Sheridan, September 20. A six-wheel Little Giant has also been donated to this service together with the services of two expert truck drivers.

mer Camps for military training which have been in operation for several years has demonstrated the effectiveness of a short and intensive course of military training in qualified educated men to aid in filling the great deficiency in commissioned officers that would immediately arise in case a national emergency required the raising of a large volunteer army. The course of instruction is designed to this end rather than for training for service in the ranks.

In view of the utter lack of a reserve body of officers necessary to organize and command volunteer troops, attendance at the camp is in the opinion of the best military authorities an important and most useful public service.

**Course of Instruction.**—Instruction will be furnished by officers of the United States Regular Army specially detailed for the purpose. The course will comprise company and battalion drill, the mechanism and use of the mod-

ern military rifle (including target practice), military hygiene, tactics, strategy, etc. Such troops of the regular army as may be available will cooperate in the military instruction and in the different field maneuvers, exercises and demonstrations. These will include exercises in the different arms, including signal and medical corps, the purpose being to furnish the basic training for all branches of the land service which can be supplemented later by specialization according to the preference and qualification of the individual, so as to give to the men opportunities to follow the branches for which they may be best qualified. Maneuvers with regular troops representing the opposing force will be held toward the end of the camp.

**Routine.**—The mornings will be devoted to a progressive program of instruction in the duties of a soldier, from those of private to company commander. The afternoons will be devoted



#### THE LITTLE GIANT ON THE LINCOLN HIGHWAY.

This will demonstrate the coolness of the radiator when the elevation of 7,630 feet was reached. Actually climbing 3,000 feet in two and one-half miles.

to more specialized instruction, including courses, among others, in military map making, signalling, military hygiene, etc. In the evenings lectures will be given and discussions held on various military subjects.

**Applicants.**—Applicants must be citizens of the United States, they must be of good moral character, physically qualified, and must attend for the full period, unless compelled by actual necessity to leave before that time. They must conform to the rules and regulations prescribed for the government of the camp, the commanding officer having authority to discontinue their attendance upon violation of such rules and regulations. Those who have been members of the National Guard or have had other military experience may apply, and on approval may attend for less than the prescribed period. As the military training is progressive, the second and latter part of the camp—from October 1st and October 8th, respectively, is recommended for such men. Men of sufficient experience may be used as officers and noncommissioned officers for the various organizations in the camp.

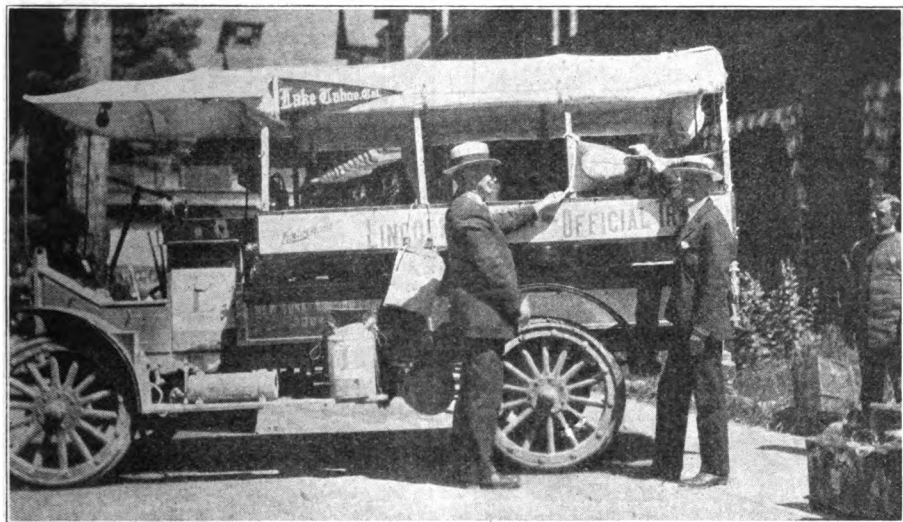
**Transportation.**—Applicants authorized to attend will be required to pay their traveling expenses to and from the camp.

**Subsistence.**—Wholesome, healthful and ample meals will be furnished at a rate of about 50 cents a day, which amount is included in the deposit to be made by each approved applicant. This amount will include the payment of cooks, assistants, waiters, etc.

**Clothing.**—A uniform will be worn by all attending the camp. The following should be provided: one pair of marching shoes, one suit of cotton olive drab uniform, one extra pair of breeches, one campaign hat, two cotton (or wool) olive drab colored shirts, one pair of leggings, medium weight socks, fall underwear.

Besides the above one pair of light shoes, woolen underwear, etc., should be taken to the camp. It is suggested that the following articles will be found useful: raincoat, folding camp chair and electric hand lamp.

The Stetson shoe is recommended, but any good tramping or hunting shoe (broken in) will be satisfactory.



THE LITTLE GIANT ON THE LINCOLN HIGHWAY.

Gentleman on right is Burton Holmes, the celebrated travelogue lecturer, who showed a great deal of interest in the Little Giant Truck at Tahoe Tavern. He was standing here when the moving pictures were taken of the truck loading baggage and leaving the lake.

The uniform articles are similar to those prescribed for the Regular Army. If not possessed, they must be purchased; they will cost from \$8.00 to \$12.00, depending upon quality. All the large clothing firms in Chicago should be able to furnish them.

Civilian clothing, etc., in trunks and suit cases will be properly stored at the post.

**Government Equipment.**—The Government will provide cots, two blankets (for each man), tentage, cooking outfits, tableware, buckets, basins, mattresses, pillow and pillow slips, bed sheets, also the U. S. Army Infantry equipment, including rifle. Articles of Government property lost or broken will have to be paid for.

**Organization.**—Attendants at the camp will be divided into organizations commanded by officers of the regular army, whose duties cover not only those of instruction but also the health and general welfare of their commands. In short, everything necessary to the health and tending to the comfort and advance-

ment of men in attendance which lawfully can be furnished by the War Department will be provided.

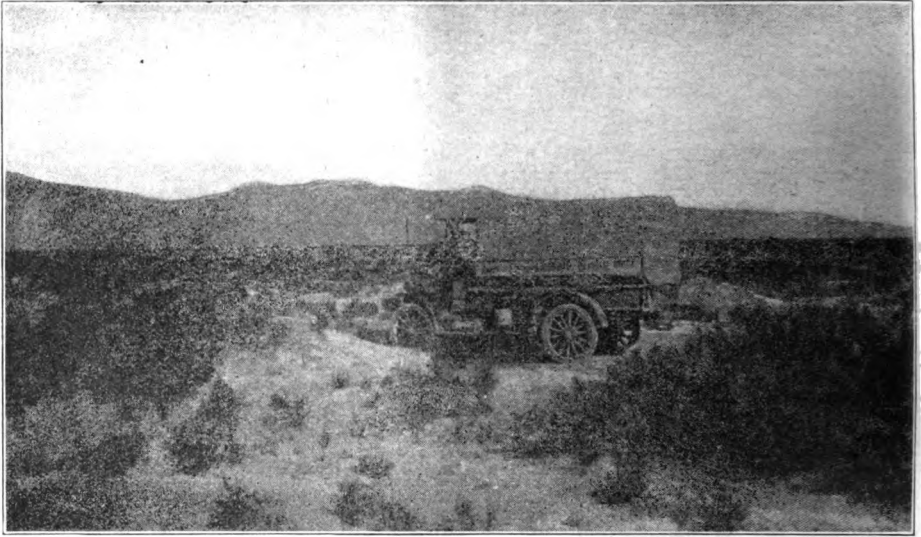
**Inoculation.**—It is advised that those below 45 years of age, who intend to participate in the encampment at Fort Sheridan, take the anti-typhoid vaccination.

**Examination.**—No examination is required, but a board of regular army officers on duty at the camp will make such recommendations as to individual qualifications as they deem proper, to be filed with the War Department.

**Expense.**—The total cost, which will be borne by the men attending the camp, including uniform, food and all incidental expense, except traveling expenses, will be about \$40.00 per man during the entire period of the camp. \$25.00 must be deposited with the Financial Officer, upon arrival of each man at the camp, to cover subsistence and camp expenses.

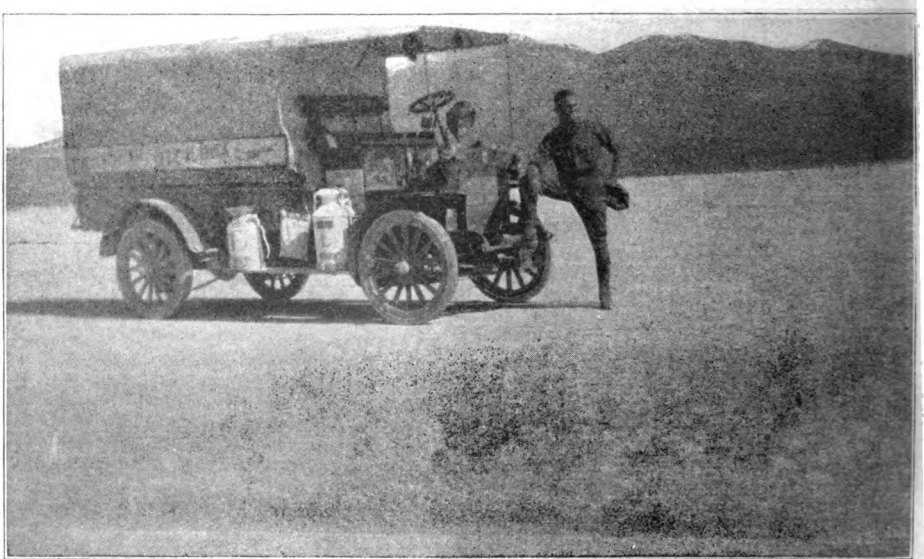
**Camp.**—The camp is located at Fort Sheridan, on the lake shore, 26 miles north of Chicago.





**THE LITTLE GIANT ON THE LINCOLN HIGHWAY.**

Six hundred miles of sage brush and desert from Salt Lake City to Reno, Nevada. Water can be had at intervals of 60 to 80 miles;—hard plugging but the truck never failed thru the hard grinds.



**THE LITTLE GIANT ON THE LINCOLN HIGHWAY.**

In the center of the hard sand desert. Was able to make 28 miles an hour across here.



**THE LITTLE GIANT ON THE LINCOLN HIGHWAY.**  
Corduroy road encountered between Lake Tahoe and Placerville, Calif.



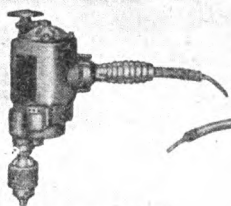
**THE LITTLE GIANT ON THE LINCOLN HIGHWAY.**

Extending the eastern courtesy to a western motorist, which resulted in four hours of trench digging, between Fallon and Reno, Nevada.

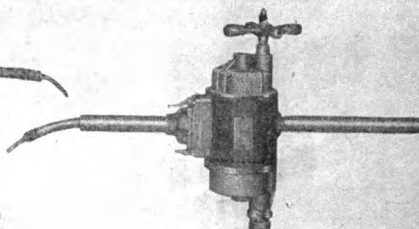
This is the typical soft pulverized sand road which breaks springs on 20 per cent of the cars on account of the hidden holes covered with drifting sand. It is impossible to go more than four or five miles an hour over this kind of road. One of the hurdles on the Lincoln Highway.



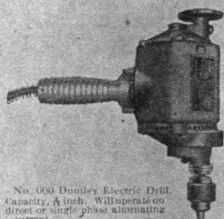
# Everything in Electric Tools



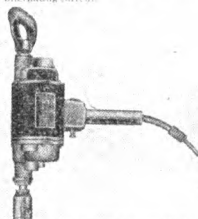
No. 8 Dundley Electric Drill.  
Capacity 1/2 inch. Will operate on direct current or single phase alternating current.



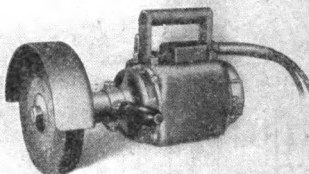
No. 3SS Dundley Electric Drill.  
Has No. 3 Morse Taper socket, designed for heavy duty. Will operate on direct or alternating current.



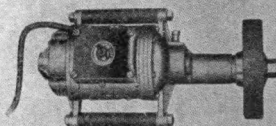
No. 600 Dundley Electric Drill.  
Capacity 1/2 inch. Will operate on direct or single phase alternating current.



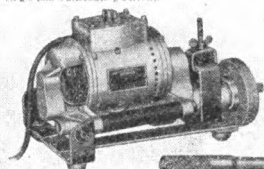
No. 1SS Dundley Electric Drill.  
Capacity 1/2 inch. Will operate on direct or single phase alternating current.



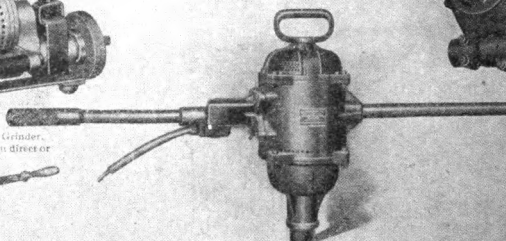
Dundley Electric Grinder.  
Built in two sizes for 6 inch and 8 inch emery wheel. Will operate on direct or alternating current.



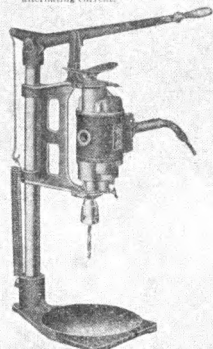
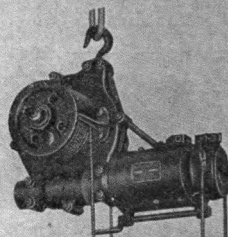
No. 1 Dundley Sash Spindle Grinder.  
Built in three sizes for 4, 5 and 6 inch emery wheel. Will operate interchangeably on direct or single phase alternating current.



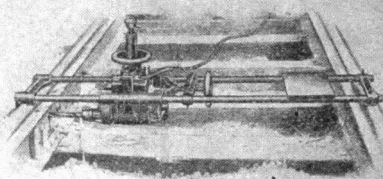
Dundley Portable Baric Grinder.  
Built in three sizes to operate on direct or alternating current.



No. 4 Dundley Center Spindle Electric Drill.  
Will operate on direct current. Has No. 4 Morse Taper Socket.



Sensitive Drilling Stand for Dundley Electric Drills.  
Built in five sizes to take standard Dundley electric drills up to 1/2 inch capacity.



Dundley Electric Track Drill.  
Built for rapid work in rail bonding and for drilling and reaming jobs, holes. Built in three sizes for 400 volts, direct current.

Dundley Portable Electric Hoist.  
Built in capacities up to 1 ton. For 110 and 220 volt direct current only.

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## Chicago Pneumatic Tool Co.

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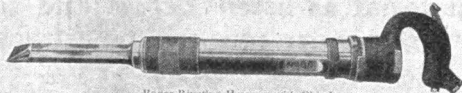
52 Vanderbilt Ave., New York

When writing to advertisers please mention Ideal Power.

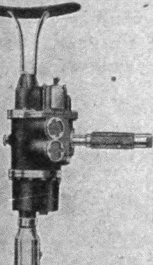
# Everything in Pneumatic Tools



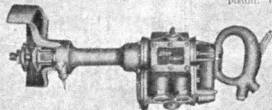
No. 10 F Little Giant Midget Drill.  
For drilling ball race holes in stay bolts.  
Speed, 2700 RPM. Capacity, 5/16 inch.



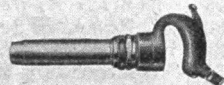
Boyer Riveting Hammer with Chisel.  
The chisel is held in place with a safety screw or collar which prevents shooting out of chisel or piston. Well adapted for cutting out rivets.



No. 3 Improved Little Giant Drill.  
Two speeds, 100 and 200 RPM. reversible or non-reversible. Capacity, 5/16 inch.



No. 4 Improved Little Giant Grinder.  
For general and heavy work. Speed light, 300 RPM.



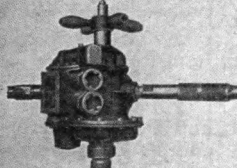
Boyer Chipping and Calking Hammer.  
Made in many sizes and styles to adapt it to a wide range of work.



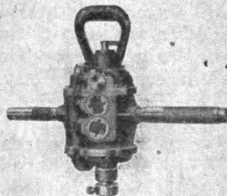
No. 10 Little Giant Grinder.  
For light work, speed light, 300 RPM.



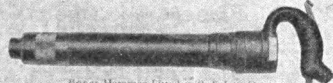
Boyer Riveting Hammer.  
Made in capacities for driving up to 1 1/2 inch rivets.



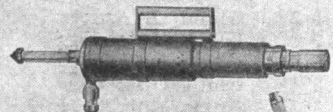
No. 1 Ball Bearing Little Giant Drill.  
Furnished either reversible or non-reversible.  
Capacity, 7/16 inches.



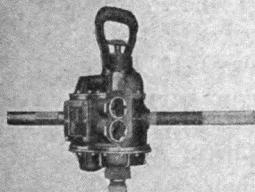
Improved Little Giant Reversible  
Wood Boring Machine.  
Capacity, Nos. 2-4 inches; No. 11-1 inches.



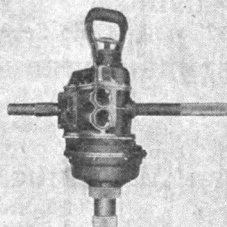
Boyer Hammer Fitted with Safety Device.  
The safety device is furnished when required and effectually prevents the shooting out of piston or rivet set.



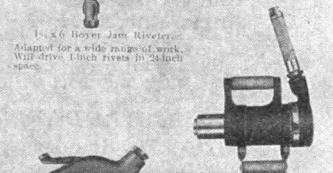
1 1/2 X 6 Boyer Jam Riveter.  
Adapted for a wide range of work.  
Will drive Lincoln rivets in 24 inch space.



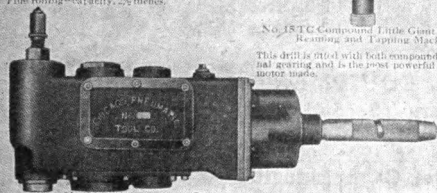
No. 11 Improved Little Giant Reversible  
Reaming and Tapping Machine.  
Reaming and tapping—capacity, 2 inches.  
Fine reaming—capacity, 2 1/2 inches.



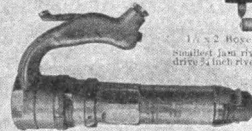
No. 18 TC Compound Little Giant Reversible  
Reaming and Tapping Machine.  
This drill is fitted with both compound and internal gearing and is the most powerful pneumatic reamer made.



1 1/2 X 2 Boyer Jam Riveter.  
roughest jaw riveter made. Will  
drive 5/16 inch rivets in 8 inch space.



No. 19 Little Giant Chain Driven Corner Drill.  
Has No. 4 Morse taper socket. Will drill within 1 1/2 inches of end wall or corner.



Boyer Riveting Hammer with Inverted Handle.  
Adapted for work in close quarters. Same capacity as standard riveting hammer.



Boyer Pneumatic Holder-on.  
For holding up rivets.

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## Chicago Pneumatic Tool Co.

1014 Fisher Bldg., Chicago

Branches  
Everywhere

52 Vanderbilt Ave., New York

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# After Inventory

We find ourselves overstocked on various items of raw material as listed below and solicit inquiries for prices which we are sure will be attractive.

## VALVES.

50 1½" Brass Angle Valves.	150 ¾" Brass Angle Valves.
25 1" Brass Angle Valves.	200 ¼" Brass Angle Valves.
150 ¾" Brass Angle Valves.	50 2" Brass Angle Valves.
5 7" Iron Body Crane Angle Valves, (Flanged Type.)	
2 7" Iron Body E. C. & B. Angle Valves, (Flanged Type.)	
100 ¾" Brass Globe Valves.	50 1¼" Brass Globe Valves.
25 ¾" Brass Globe Valves.	15 2" Brass Globe Valves.
100 1" Brass Globe Valves.	
16 3" Screwed Type Kelley and Jones Globe Valves, (Iron Body.)	
2 2" Flanged Crane Globe Valves, (Iron Body.)	
2 2" Flanged W. T. Co. Globe Valves, (Iron Body.)	
1 3" Flanged Powell Globe Valves, (Iron Body.)	
1 3" Flanged Crane Globe Valves, (Iron Body.)	
10 3" Flanged W. T. Co. Globe Valves, (Iron Body.)	
1 3½" Flanged W. T. Co. Globe Valves, (Iron Body.)	
5 4" Flanged W. T. Co. Globe Valves, (Iron Body.)	
6 7" Flanged Jenkins Globe Valves, (Iron Body.)	

## UNLOADERS.

16 2" Globe Unloaders.	6 2" Richards I. and P. Unloaders.
2 3" Globe Unloaders.	3 3" Richards I. and P. Unloaders.
5 4" Globe Unloaders.	7 3½" Richards I. and P. Unloaders.
2 4½" Globe Unloaders.	2 4" Richards I. and P. Unloaders.
3 3" Angle Unloaders.	3 4½" Richards I. and P. Unloaders.

## TUBING.

100 Pcs. 23/8" o.d.; 2 1/16" i.d.; 5/32" wall, (Ohio Seamless), 19" long.

## U. S. STANDARD SEMI-FINISHED HEX NUTS.

250 2" Standard.	240 2¼" Check.
150 2¼" Standard.	300 2½" Check.
200 2" Check.	

## TODD SPIRAL PACKING.

10 Boxes 1/8".	4 Boxes 1/2".
4 Boxes 1/8".	2 Boxes 5/8".
2 Boxes 7/8".	

## ELECTRICAL EQUIPMENT.

- 18 Model B Motsinger Auto Sparkers, (Second Hand, in good condition.)
- 300 Model 02 Wico Igniters.
- 1 Genl. Elec. Type "I", Four Pole, 20 H.P., 900 R.P.M., 3 Ph., 30 Cycle, 440 Volt, Form "K" Squirrel Cage Induction Motor, No. 160445 (New.)

## BELT LACING MACHINE.

- 1 Birdsboro Belt Lacing Machine, (Practically New.)

# CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Building  
CHICAGO

BRANCHES EVERYWHERE

52 Vanderbilt Ave.  
NEW YORK

When writing to advertisers please mention Ideal Power.

**He Never Did It Before.**

A Chicago Pneumatic salesman bought the only remaining sleeping car space. An elderly lady next him in line in front of the ticket window burst into tears.

"I must have a berth in that train," she exclaimed, "it's a matter of life or death!"

The salesman gallantly sold his reservation to her. Next morning his wife was astonished to receive the following telegram from her husband:

"Will not arrive until tomorrow. Gave berth to an old lady last night."

**A Real Optimist.**

Mrs. Hogan was busy washing when Hogan came in, dropped into a chair and said: "Well, Norah, Oi've lost me job at the oil well, but Oi'm glad Oi ain't Terry Dolan."

"Why air yez thankful fer that?" asked Mrs. Hogan.

"'Tis aisy seen," answered Hogan. "If Oi was Terry now an' widout a job, shure Oi'd be losin' five dollars a day instid av only three and a half. Think av that, darlin'."

**Sauce for Goose and Gander.**

"What!" exclaimed the motorist, who had run over a farmer's toe. "You want five hundred dollars for a crushed foot? Nonsense! I'm no millionaire."

"Perhaps not," cried the suffering farmer; "and I'm no centipede either."—Exchange.

**Celebratin'.**

"Pa wants a bottle o' liniment and maw wants a bottle o' china cement, right away."

"All right, sonny. What's wrong?"

"Maw hit paw with the sugar bowl."—Judge.

**Rough.**

He—So your dear count was wounded?

She—Yes, but his picture doesn't show it.

He—That's a front view.

**Ten Lies Oftenest Told.**

Here are ten lies which are often heard, according to the amiable Mr. Arthur Aull, of Lamar:

Yes, we're out, but we've just ordered a lot of it.

I didn't care anything about the money. It was the principle of the thing.

I'd just like to have been in his place. I'd have showed them.

If I had that woman for a little while I'd teach her a few things.

If I'd catch a kid of mine at anything like that I'd blister him.

If I had just a little money I know where I could go out and make a pile.

I never would care to be rich, just comfortably fixed.

My wife and I have never exchanged a cross word.

If you don't think it's a good thing for you I don't want you to do it.

I've never seen such weather before.

**The Thrill That Comes But Once in a Lifetime.**

When you get your first shave.

When entertaining your friends from the country at your favorite hotel, the waiter calls you by name.

On the day you're to take your best girl to a ball game, the old man hands you a couple of passes.

When you get caught in the rain with your wife, who demands a taxi but a friend of yours picks you up in his auto.

The day you played on the home team and your best girl attended the game.

When you are first married and wifey sends you to the store and that entrancing blonde murmurs: "What is it, please?"

When, retiring late at night, you kick over a chair and do not hear her dear voice ask: "Is that you, John?"

When she pins that first rose on you.

On your way to Sunday school with your best girl, her pa comes along in his auto and the old gent stops and says: "Climb in."



A stitch in time may close the mouth  
of a gossip.

And a little widow with a dimple is a  
dangerous thing.

The late husband catches the early  
morning lecture.

Wealth and religion seem to have but  
little in common.

There is more or less graft in the con-  
struction of family trees.

The bet you intended to make but  
didn't is always the one safe bet.

No man likes to have a lawsuit, but if  
he has one he dislikes to lose it.

You can rely on a man to keep his  
word when it is to his advantage so  
to do.

Some men couldn't hear the small  
voice of conscience through a mega-  
phone.

An old bachelor says that most fash-  
ionable young women are engaging  
works of art.

The fools that rush in where angels  
fear to tread are lucky if they are able  
to crawl out.

"Live and let live." is a good motto  
for all men—with the exception of  
butchers and undertakers.

When ignorance wins intelligence  
drops below par.

If a boy doesn't love his mother his is  
a hopeless case.

An expressman says that spinsters are  
uncalled for packages.

True philosophy consists in not want-  
ing the things you can't get.

Satan's best servants are people who  
love money and hate work.

The average man is an economist  
when he has to buy things for his wife.

Lots of people actually believe that  
their troubles are interesting to others.

An air of abstraction isn't breezy  
enough to fan a spark of genius into a  
flame.

When a man's education is finished he  
helps to swell the undertaker's fortune.

The earth is said to be flat at the  
poles—and some candidates are also  
flattened at the polls.

There may be times when it isn't nec-  
essary to speak the truth—but at such  
times it is usually unnecessary to speak  
at all.

When a man tells you how you ought  
to run your business just take a look at  
the way he is running his own.

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# IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Truck  
By THE IDEAL POWER PUBLISHING COMPANY  
Fisher Building, Chicago

VOL. XI

NOVEMBER, 1915

No. 10

## Installation of Oil Engine Simple as Compared With Steam

By W. H. Callan, Manager Compressor and Engine Plant.  
Chicago Pneumatic Tool Co., Franklin, Pa.

The "Giant" Oil Engine, made by the Chicago Pneumatic Tool Company, offers many advantages to the industrial manufacturer, and to show the exceptional convenience and applicability of this engine for such service, I give below a real happening and show how readily this unit lends itself to such conditions.

The line shaft and form of drive installed in our shop is what is known as the "Multiple or English System of Rope Drive," and was made by the George V. Cresson Company of Philadelphia, Pa.

As we were shutting the engine down at quitting time on the evening of August 4th, the crosshead gave way, badly bending the piston rod, off-setting the connecting rod, twisting the crank on the shaft, as well as bending the main shaft; thus putting our power plant completely out of commission. This happened at five o'clock in the evening, and, as might be understood, it required some little time to collect our thoughts sufficiently so as to know just how best to proceed in order to get the plant running by seven o'clock the next morning.

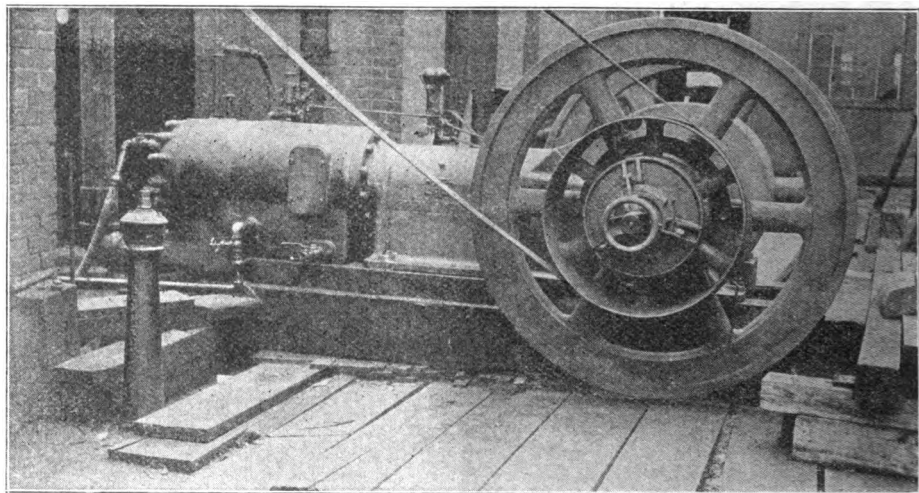
The arrangement of our plant is such that we have two long lines of shafting, one located on each side of the main

shop. Another section of shafting extends from the power plant, over into the pattern shop, the latter section furnishing the power for the pattern shop and electric generator.

When the excitement of the mishap died down an hour or so after it happened, we were able to sufficiently collect our thoughts so as to proceed toward installing Giant oil engines at suitable places and connect them to the line shafting. We had several "Giant" Oil Engines in stock at the time this happened, therefore proceeded to locate them at suitable points under these different sections of shafting. Four gangs of men were selected, three for the placing of the engines and the other gang to procure suitable pulleys for connection to the line shaft so that when the engines were placed they could be belted up. The engines were equipped with suitable clutches for throwing out when desired to stop or start them.

We show, in the photograph attached, one of the engines that was installed to drive the line shafting which operated the generator and pattern shop machinery. The arrangement of the shafting in this case was such that it was the most convenient for us to locate this





Giant Fuel Oil Engine—one of several installed over night during breakdown in power plant.

engine out of doors between the two buildings, as shown, which gave us an excellent opportunity to place it without interference to either of these departments.

This, as might be imagined, was a hurry-up job all through, and in the photograph shown it will be noted that the belt was much narrower than the pulley of the clutch. The reason for this is that it was the only belt of its kind available, as on account of this engine being out of doors it was impossible for us to use a leather belt, and the only kind of canvas belt we had was one 6 inches in width. We soon found that a single belt was inadequate for the load, so another piece of 6-inch belt was applied over the top of the one already in place, which increased the pulling power of the belt materially.

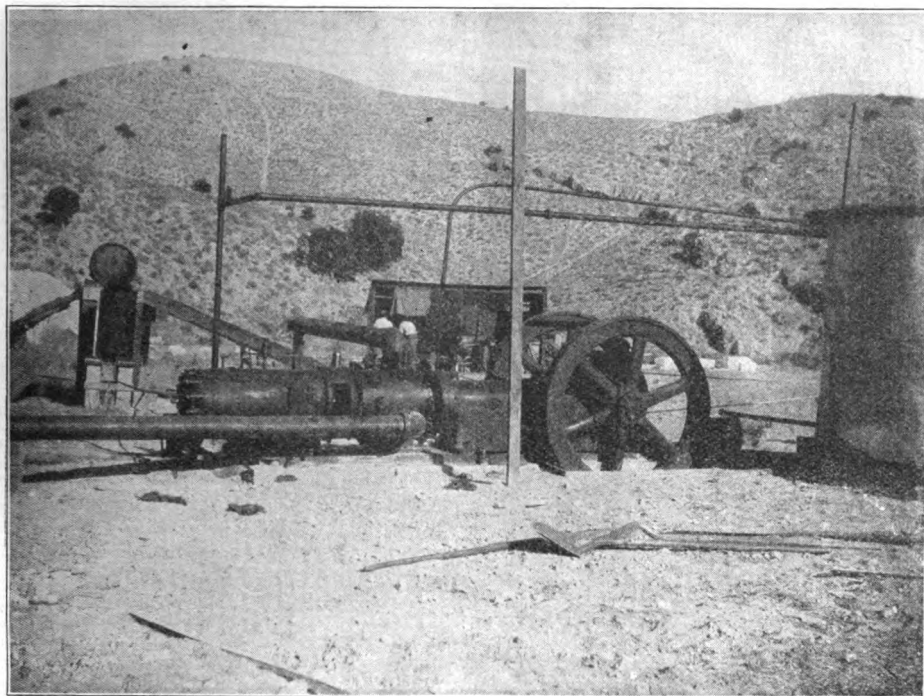
It took some little experimenting on such matters as this. However, I am glad to say that at seven o'clock the next morning we had our plant in operation, with several engines driving the different sections of line shafting as above outlined.

One of the principal reasons why we were able to make these installations in such short time was that there was very little to do with the engines other than

to place them, as there were no expensive steam lines to run to the engine, nor drains, traps, nor expensive piping to connect, but rather all that was needed was to place an oil tank close to the engine, connect a piece of pipe to the exhaust and go ahead.

We operated our plant with this arrangement of engines until the main engine was repaired and put in shape, which required about fourteen days' time. There was not a single hold-up or shut-down during this entire period, chargeable to the engines' failure.

The engine shown in the photograph, as will be noted, is merely setting on a wood skid, which is suitably braced from the building, the skid being held down by bars of steel laid across the top, as shown. Our reason for photographing this engine and not the others was that this one was outside the building and shows rather an extreme condition. This engine was connected to the shaft driving the generator and pattern shop machinery. Our electric lights and traveling cranes, as well as a number of machine tools were all on the same circuit, and, despite the fact that electric crane and machine tool service is very intermittent, we experienced absolutely no trouble with our electric lights during



N-SO Compressor installed by the Travertine Onyx Co. at Low, Utah.

Low, Tooele County, Utah,  
Sept. 9, 1915.

The F. C. Richmond M'chy Co.,  
Salt Lake City, Utah:

Gentlemen:—Permit us to add our few words of praise to the long list of recommendations shown us at the time our power plant was under consideration; of the 292-foot displacement type N-SO Chicago Pneumatic Tool Co.'s Gas Engine and Compressor recently sold us.

From the time this unit was received on our siding to the present time we experienced no difficulty in handling, setting, fitting up or starting, and this in the absence of a practical gas engineer or machinist.

The simplicity of the machine and

complete instructions sent us rendered this possible, and we are firmly convinced that had not this unit been obtainable we would have been obliged to have given up the idea of installing a power plant owing to the difficulties under which we operate, including lack of water, high teaming expense, etc.

At the present time the unit is operating perfectly, and we anticipate no difficulty in keeping it in that condition.

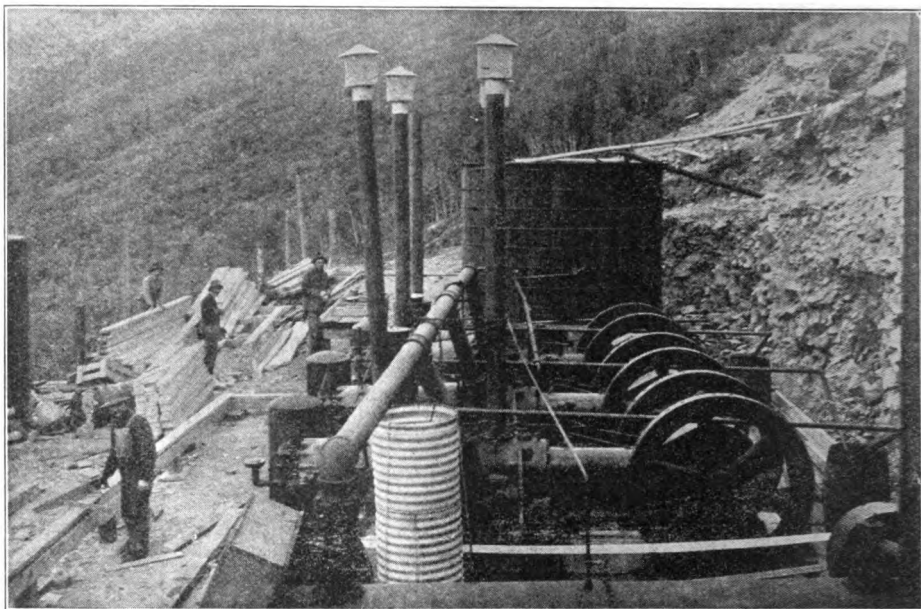
Thanking you for your many courtesies and anticipating the day we may hand you our order for a duplicate unit, we are,

Yours very truly,  
TRAVERTINE-ONYX CO.,  
P. W. Lincoln, Supt.

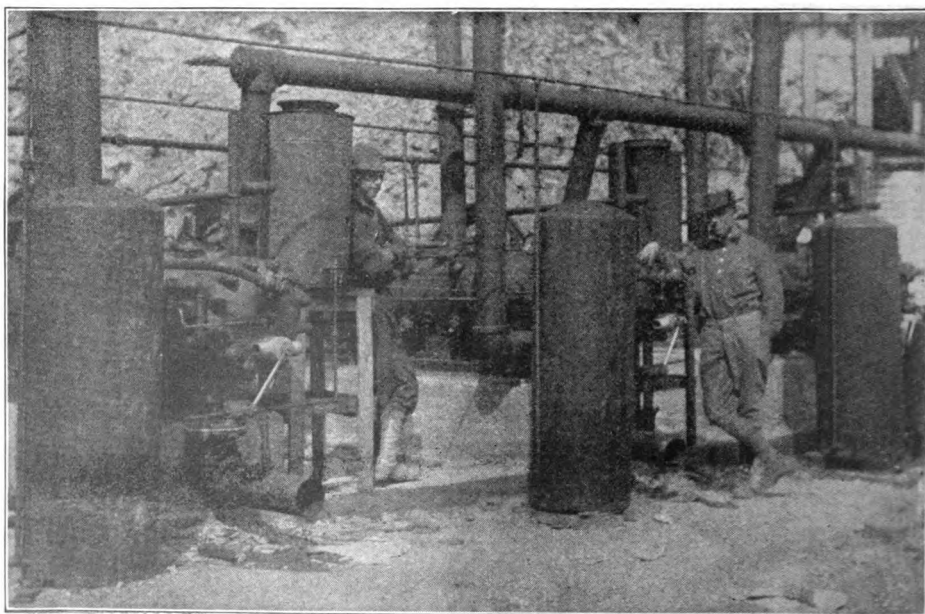
the time the power was furnished by this fifty-horse power oil engine.

In addition to the intermittent service of our fifteen-ton electric cranes and other electric tools in the shop, this same section of shafting was driving the pattern shop machinery, where high speed wood planers and circular saws

are constantly being suddenly started and stopped. We have direct current, 115 volts, and since no trouble was experienced even with this unsteady service, it is proof in itself that our oil engine becomes a very satisfactory prime mover for electric machines.



**Battery of three N-SO Chicago Pneumatic Fuel Oil Compressors installed by the Mineral Products Corporation, Marysville, Utah.**



**Another view of the same plant.**

**THE MINERAL PRODUCTS CORPORATION**  
**MARYSVALE, UTAH**

Marysvale, Utah, Oct. 25, 1915

F. C. Richmond Machinery Co.

117 West 2d South Street,

Salt Lake City, Utah.

Gentlemen:

ATTENTION MR. F. C. RICHMOND

Concerning the installation of three of your Chicago Pneumatic Tool Company's type N-S-O air compressors, I wish to inform you that these machines have given us extremely satisfactory service.

The machines have been in operation constantly since the completion of installation on September 20th and we have had no difficulties of any kind in their operation.

The plant has proven to be very economical and efficient and I wish to express my high degree of satisfaction with the same.

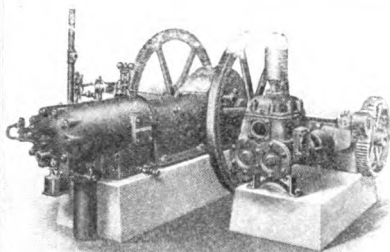
Very truly yours,

JAL/FHS

MINERAL PRODUCTS CORPORATION.

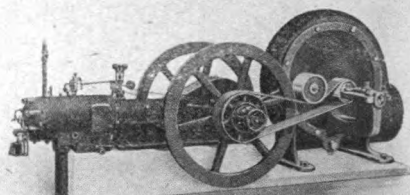
*James A. Lane* MGR.

# A Few Applications of Giant Oil Engines



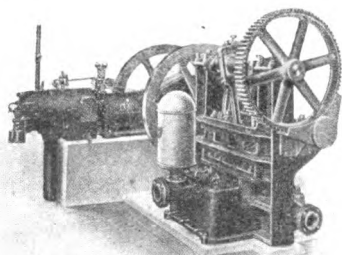
Giant Oil Engine Driving Gardner Pump

We furnish complete installations



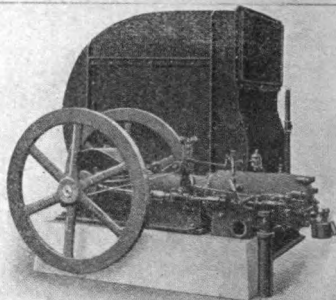
Giant Oil Engine Operating Volume Exhauster

An ideal short belt drive outfit



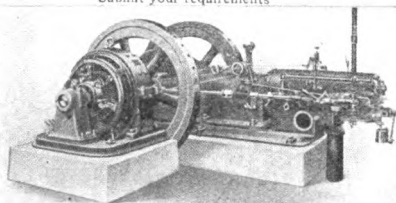
Giant Oil Engine Operating Goulds Triplex Pump

Submit your requirements



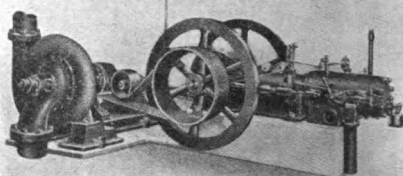
Giant Oil Engine Operating Planoidal Fan

Also furnished with belt drive



Giant Oil Engine Direct Connected to Generator

Regulation guaranteed within 3 per cent variation  
This combination also furnished with belt drive



Giant Oil Engine Operating Alberger Pump

We supply complete installations  
for any form of pumping service

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## Chicago Pneumatic Tool Co.

1014 Fisher Bldg., Chicago

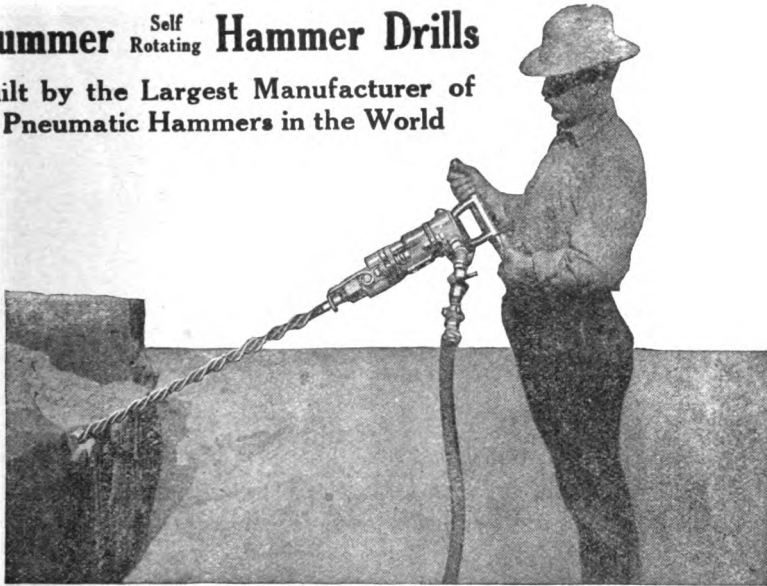
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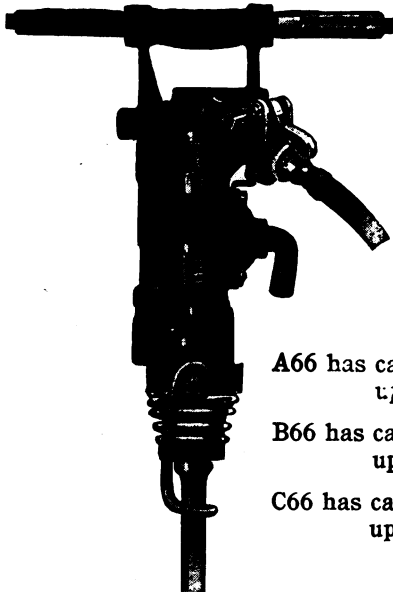
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# *Boyer* **Hummer** Self Rotating **Hammer Drills**

Built by the Largest Manufacturer of  
Pneumatic Hammers in the World

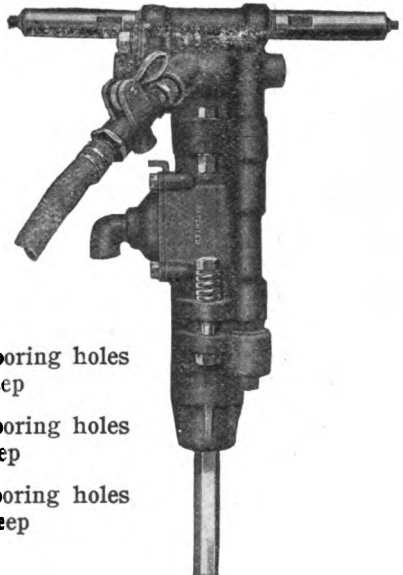


A66 "LITTLE HUMMER" Drill with Auger Bit for Drilling Ore, Coal, Sandstone, Etc.



A66 "Little Hammer"

SEND FOR  
BULLETIN  
216



B66 "Hammer"

A66 has capacity for boring holes  
up to 6 ft. deep

B66 has capacity for boring holes  
up to 8 ft. deep

C66 has capacity for boring holes  
up to 12 ft. deep

**Chicago Pneumatic Tool Co.**

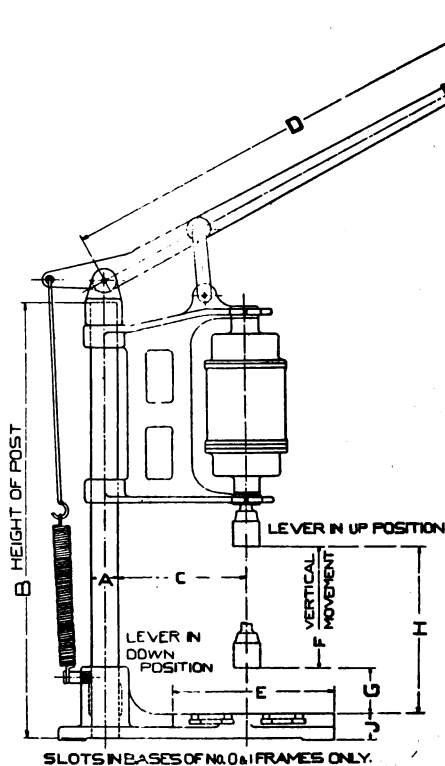
1014 Fisher Bldg.  
CHICAGO

Branches Everywhere

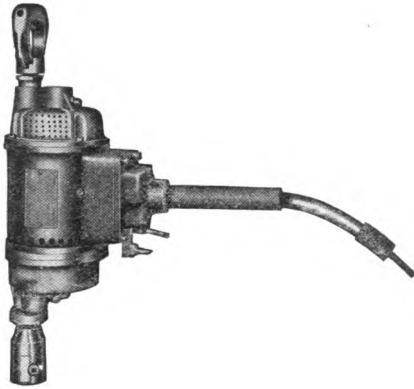
52 Vanderbilt Ave.  
NEW YORK

When writing to advertisers please mention Ideal Power.

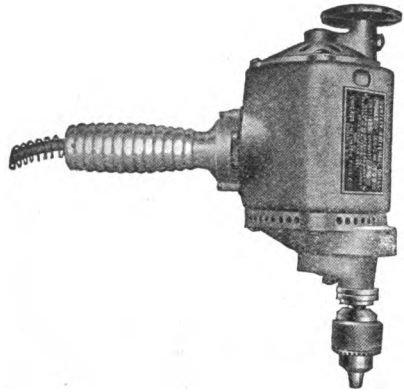
## General Dimensions of Duntley Electric Sensitive Drilling Stands



SIZE No. ELECTRIC DRILL	No. 000	No. 000X	No. 00	No. 0	No. 1
Drilling Capacity in Metal	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{5}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "
A	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{5}{8}$	$1\frac{5}{8}$
B	19	21	$23\frac{3}{8}$	$24\frac{7}{8}$	$26\frac{1}{8}$
C	$5\frac{3}{8}$	$5\frac{3}{8}$	$5\frac{3}{8}$	$7\frac{3}{8}$	$7\frac{3}{8}$
D	$14\frac{1}{16}$	$14\frac{1}{16}$	$14\frac{1}{16}$	$26\frac{1}{8}$	$26\frac{1}{8}$
E	8	8	8	10	10
F	$4\frac{3}{8}$	$4\frac{1}{2}$	$4\frac{3}{8}$	$5\frac{1}{2}$	$5\frac{3}{4}$
G	$4\frac{3}{8}$	$5\frac{1}{4}$	$3\frac{3}{4}$	$3\frac{5}{8}$	4
H	$8\frac{3}{4}$	$9\frac{3}{4}$	$8\frac{3}{16}$	$9\frac{1}{8}$	$9\frac{3}{4}$
J	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	$1\frac{5}{8}$	$1\frac{5}{8}$
Wt. in lbs. of Stand Only	$16\frac{1}{2}$	17	$19\frac{1}{2}$	44	$46\frac{1}{2}$
Code Word Stand Only	Madros	Magique	Mainote	Maldad	Mamelon



Duntley Electric Universal Side Spindle  
Drill—Size 0.



Duntley Electric Universal Side Spindle  
Drill—Size 000.

#### Duntley Electric Sensitive Drilling Stand.

This stand is strong and substantially made throughout and is intended for accurate drilling. The weight of the drill and drill arm is counterbalanced by means of a spring, and a key or feather in the movable bracket keeps the drill in vertical alignment and insures the drilling of straight holes.

The larger sizes are provided with tee slots in the base plate so that the work may be bolted down if desired.

It is built in five sizes to take the standard Duntley side spindle drills of either the universal or direct current types (see drill bulletins) ranging in drilling capacity of from  $\frac{1}{8}$  to  $\frac{1}{2}$  inch in metal.

The drill itself is held in place by two clamping straps, shown in the cut, secured by screws and thumb nuts, allowing it to be removed in a few seconds and used as a portable drill.

Any of the standard Duntley Heavy Duty Side Spindle Drills of from  $\frac{1}{8}$  to  $\frac{1}{2}$  inch drilling capacity manufactured by this company will fit the drilling stand corresponding to their respective capacities, as shown in the table on the opposite page.

The Universal Drills are described in

detail in Bulletin E-35 and will run interchangeably on direct or single phase alternating current of 60 cycles or less.

The direct current drills are described in Bulletin E-33.

#### And Then He Sat Down.

"I think that children are not so observing as they used to be," said a member of the School Board to a teacher whose class he was visiting.

"I hadn't noticed it," replied the teacher.

"Well, I'll prove it to you," answered the committeeman. Turning to the class, he said:

"Some one give me a number."

"Thirty-seven," said a little girl eagerly.

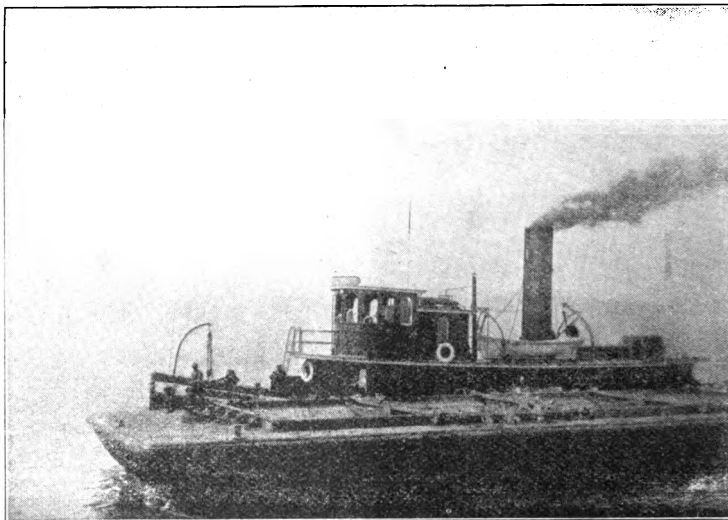
He wrote "73" on the board. Nothing was said.

"Well, some one else give me a number."

"Fifty-seven," said another child.

He wrote "75" on the board, and smiled knowingly at the teacher when nothing was said. He called for a third number and fairly gasped at the indignation manifested by a small red-faced urchin, who said: "Seventy-seven, and see if you can change that."—Ladies' Home Journal.





One of the hopper scows used by the Dominion Government, whose dumping doors are operated by No. 15 Little Giant Motors.



Showing method of operating the dumping doors with No. 15 Little Giant Motor.

#### Novel Use for Little Giant Drill.

New uses for pneumatic tools are being discovered every day. A novel application of the No. 15 T. C. Little Giant Compound Reversible Reaming and Tapping Machine has just been reported by the Holden Co. of Montreal, Canada, sales agents for the Chicago Pneumatic Tool Co. The Department of Public Works of the Dominion Government has a number of hopper scows, which are used on the various dredging jobs they have on hand, on one of which—the widening of the channel to relieve the current in Montreal harbor—they are at present engaged.

Above photo shows the type of hopper scow, which is an all-steel scow, having a capacity of 305 cu. yds., with five containing pockets. The bottom of each pocket is closed by two heavy doors, which are 18 feet long by  $4\frac{1}{2}$  feet wide, 8 inches thick. These were formerly wound up by a special hand wrench, and took six to eight men from forty minutes to one hour to close the doors in all pockets. By using the No. 15 Little Giant Drill Motor they can do the same work in twenty minutes with two



Progress view of Chicago's new Municipal Pier, whose 160,000 rivets were driven with Boyer Hammers.

men. Hence, they not only save considerable time, but have cut down the labor expense as well.

The particular dredge engaged on this work is No. 110, under Captain Mac-Ininch. It has a capacity of 1,500 yards per ten-hour day.

#### On a Party Line.

On a Sunday afternoon an esteemed party named Smith casually remarked something about dinner, whereat his wife wearily sighed.

"John," said she, "I am too dead tired to cook tonight. Suppose we visit one of the neighbors and take a chance on being invited to stay for dinner."

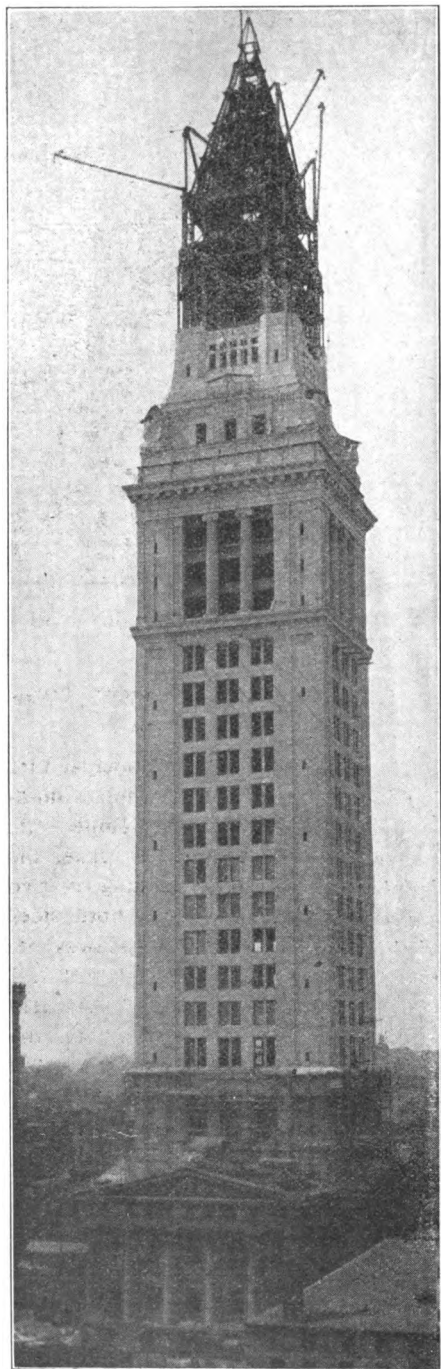
"All right," was the ready rejoinder of willing father. "How about the Browns?"

"Not on your life!" quickly replied mother. "The Browns are going to have pork and cabbage. I heard Mrs. Brown order it over the party telephone. The Greens ordered chicken."

#### Boyer Hammers Drive 160,000 Rivets in Municipal Pier.

Above is a view of the Municipal Pier looking west from the Terminal Building as it appeared on September 7th. As stated in our September issue, the freight and passenger building is two stories high and runs along both sides of the pier, with a 100-foot roadway between. It is 2,340 feet long, with 117 bays or panels on each side. As there are 30 tons of steel on each bay, the total amount of steel used is about 7,000 tons.

Boyer Hammers were used exclusively to drive the rivets in this structure, the total number being 160,000—all  $\frac{3}{4}$  inch. Mr. Geo. E. Burtscher, superintendent for the Kelly-Atkinson Construction Co., who is doing the erection work, tells us that some of the Boyer Hammers used on this work have been in continuous service for upwards of five years.



New U. S. Custom House, Boston.

### **Pneumatic and Electric Tools Help to Make Boston Beautiful.**

The new United States Custom House, with its imposing tower, is one of the new points of interest in Boston. The new structure is the result of remodeling and beautifying the old Boston Custom House, which was built in the form of a Greek cross and which required twelve years—from 1835 to 1847—to construct.

The walls, columns, and even the entire roof are of granite, and it rests upon three thousand piles, which forms foundation. Each of the massive fluted columns are 5 feet 2 inches in diameter, are 32 feet high and weigh over 40 tons. There are thirty-two of these columns. The porticos have each six columns. The granite dome at the intersection of the Cross terminates in a skylight, which is 25 feet in diameter. The cross-shaped rotunda is finished in the Grecian Corinthian style and is the main feature of the interior.

Over this dome has now been erected a granite tower of steel and granite to a height of 495 feet above the sidewalk level. If set side by side with Bunker Hill Monument would shoot up 274 feet above the apex of that celebrated shaft.

The office rooms will be located in this tower and will be used by the officers and employees. This tower contains four elevators and two stairways, and a pneumatic tube service is also provided. Each floor measures 65x75 feet.

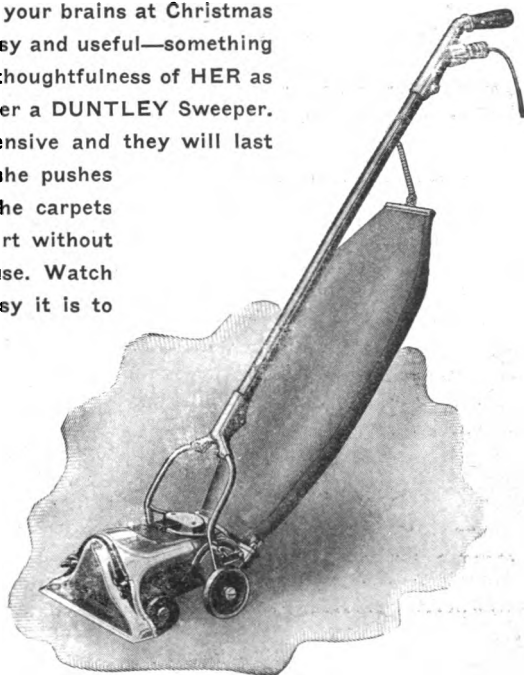
There is a large electric clock on top of the tower facing on the four sides, with a dial diameter of 21½ feet.

The cost of this tower is approximately \$2,000,000. The Perth Construction Company erected the steel and Norcross Brothers the granite work. Boyer hammers and Little Giant Drills were used in the erection work, and the Duntley Electric Drills were used on the interior work.

Mr. Wallace L. Pierce, chairman of the Board of Directors, was largely instrumental in securing from Washington the necessary appropriation for the rebuilding of this architectural wonder.

# A Word to the Husband Who Wishes to get HER Some- thing for Christmas

**Y**OU husbands who rack your brains at Christmas time for something classy and useful—something that will indicate your thoughtfulness of HER as no other present can—get her a DUNTLEY Sweeper. You know they're not expensive and they will last for years. Watch her as she pushes it for the first time over the carpets and rugs, picking up the dirt without scattering it all over the house. Watch her as she realizes how easy it is to handle, with no dust-pan to stoop to. But if you have enjoyed this part of it stick around a little longer and watch her when she empties the dust bag. Watch her when she sees the dirt, great masses of it, fall out into a heap on the paper she has spread on the floor. Surely she did not, nor did you, realize that there was half as much



**DUNTLEY ELECTRIC SWEEPER**

Price \$30.00

Complete with Attachments \$37.50

dirt in your whole house, and all of it picked up with so little effort. So again remember, for Christmas, get her a DUNTLEY Electric Sweeper; and help her enjoy life and spare her all the work and drudgery that you can.

Consult with us before buying her a vacuum cleaner for Christmas, for our line is complete at prices ranging from \$7.50 to \$150.00

## Duntley Products Sales Company

732 Michigan Avenue, Chicago

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# IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air  
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BY THE

**IDEAL POWER PUBLISHING CO.**  
1014 FISHER BUILDING  
CHICAGO, U. S. A.

C. I. HENRIKSON	Editor
Vol. XI	NOVEMBER, 1915
	No. 10

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## ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our  
subscription list.

## Information Wanted.

The editor of this magazine is contemplating the preparation of an article dealing with the history of the origin and use of electric hand drills and would welcome information from anyone particularly as to the use of such drills in the year 1900 and prior to that time. He will be obliged to anyone for information on the subject.

## Situations Wanted.

First-class tool repair man. Has had four years' experience with large locomotive works. Now in New York, but will go anywhere. Address Ad. 14, Ideal Power.

Practical engineer would like to connect with some large electric railway in the capacity of superintendent of machinery or roadmaster. Has had seven years' practical experience with some of the largest electric railways in the West and can furnish references. Has had experience with practically all makes of track and roadway machinery, including Duntley Electric Track Tools. Can handle men. Address Ad-12, Ideal Power.

A mechanical engineer, graduate of the Mass. Inst. of Tech., Boston, class of 1897, wants position as superintendent or works manager in a plant manufacturing iron or steel products. Has had

17 years experience in shop management and is competent to take charge of any shop, having such departments as boiler, foundry and forge. Address Ad-13, Ideal Power.

## Little Giant Helps to Boost Washington.

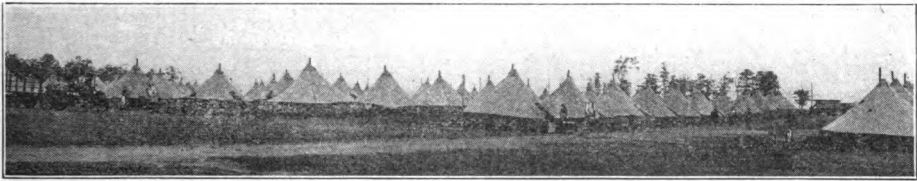
Mr. G. C. Stevens, Washington representative of the Chicago Pneumatic Tool Company, for the Little Giant Truck, accompanied seventy other prominent Washington, D. C., merchants, all being members of the Retail Merchants' Association, on a recent two-day booster trip. The entire company traveled in automobiles, taking in the principal towns in Maryland, Virginia and West Virginia. The procession was headed by a Little Giant truck made up as a band wagon, which gave concerts in every town on the trip. Boys distributed advertising matter—newspapers, etc., gotten up for the special occasion.

The trip was two days of hard, continuous driving. On the second day the party encountered what Mr. Stevens declared to be the worst roads in the country. Notwithstanding the condition of the roads, however, the Little Giant, loaded with the band men and instruments, kept the lead. It held its own against the high-powered pleasure cars. It was as successful in climbing the Blue Ridge Mountains as the Packard and the Pierce-Arrow pleasure cars.

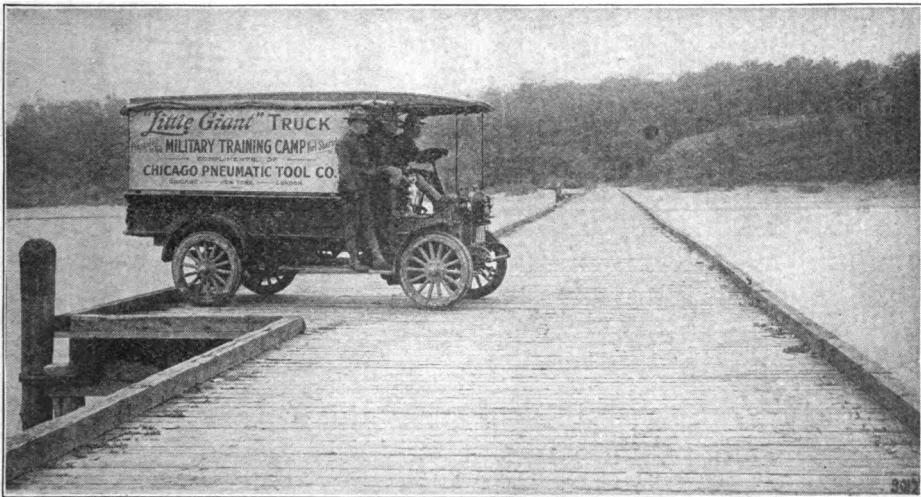
The Washington "boosters" became very enthusiastic at the remarkable performance of the "Little Giant," and before entering a town would hang a sign on it, "BIG GIANT." The car carried ten heavy musicians and their instruments and was heavily decorated. On the front were Little Giant pennants and Lincoln Highway stickers. On the back of the body was a sign, "THERE IS A LITTLE GIANT COMING YOUR WAY." On the sides were signs, "BOOST FOR AND BUY IN WASHINGTON." On the rear end was a sign, "LEADS THEM ALL—LITTLE GIANT TRUCKS."



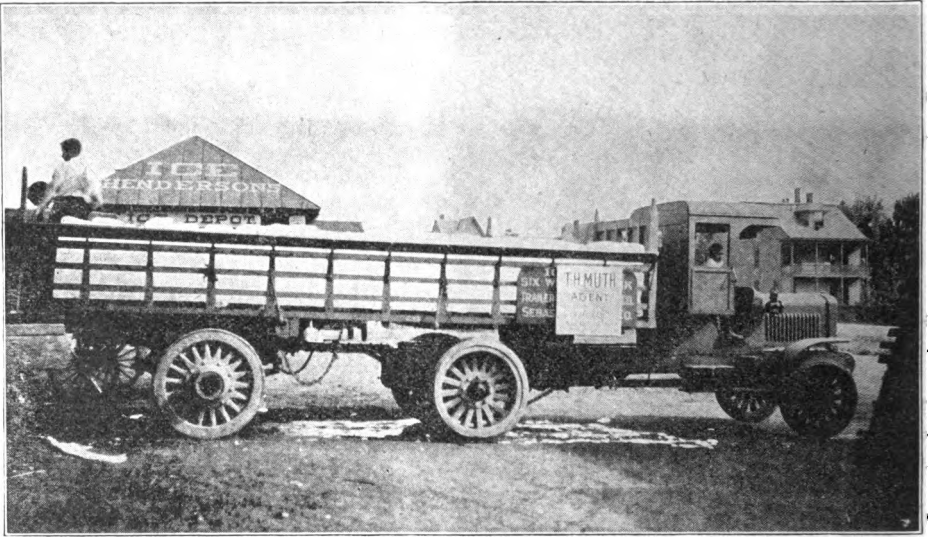
Little Giant Six-Wheel Truck on duty at Civilian Military Camp, Fort Sheridan, Illinois. When the encampment "broke up" the Little Giant Trucks received honorable discharge for efficient service and valorous conduct.



General View of the Encampment.



At Fort Sheridan—the Little Giant Truck is here shown on pier extending into Lake Michigan, backed up to unload troops on transport.



A Four-Ton General Motors Truck, equipped with Little Giant Six-Wheel Chassis, hauling eleven tons of ice.

#### Some Startling Performances of Little Giant Six Wheel Trucks.

Some very interesting demonstrations of the Little Giant Six Wheel Truck were recently made at Paterson, N. J., by T. H. Muth, who represents the Lit-

tle Giant Truck interests of the Chicago Pneumatic Tool Co. in that city. A six-wheel chassis was applied to a four-ton General Motors truck and some of the loads it was enabled to haul leave no room to doubt the remarkable increase



A Four-Ton General Motors Truck, equipped with Little Giant Six-Wheel Chassis, hauling twelve tons of flour.





Four-Ton General Motors Truck, equipped with Little Giant Six-Wheel body, hauling one box car load—165 bales—of hay.

of capacity that the six-wheel adjunct affords.

The six-wheeler carted 35 tons of flour for the Archibald Flour Company in three loads, one to Hackensack, one to Midvale and one to Garfield, N. J., from Paterson, N. J. The distance from Garfield to Paterson is 16 miles. One whole box carload of hay, 165 bales, was hauled for the Borden Condensed Milk Company from the car to the stable. An eleven-ton load of ice was carried from Paterson to Riverside, N. J., in ten minutes, for the Henderson Ice Company.

The passages of these immense loads through the streets of Paterson attracted a lot of attention. The truck was maneuvered in a manner quite impossible with any form of trailer or semi-trailer. As a matter of fact it was handled quite as easily as a four-wheeler.

In ordinary four-wheel truck construction the power is applied through the traction wheels, over which the greater portion of the load is placed. The traction wheels, therefore, both carry and push the load, but with the Little Giant Six-Wheel Truck only suf-

ficient of the load is placed over the driving wheels to secure traction and by this system of load distribution prolong the life of a tire 25 per cent.

An ordinary wagon, loaded to its limit, was recently attached to the rear of the Six-Wheel Little Giant, itself loaded to the guards, and the entire outfit—practically three times the capacity of the ordinary truck—was handled easily. While this combination of six-wheel truck with additional trailer may not be practical nor adapted to ordinary conditions, it demonstrates the great tractive power of the Little Giant power unit and shows that even with the added capacity of the larger six-wheel body, there is still a larger reserve of power on which to depend.

The six-wheeler has attracted the attention of many transportation experts from Europe as well as this country.

#### You Try It.

"What is a vacuum?" was asked of a civil service candidate. "I have it in my head," was the reply, "but can't quite get it out."





Little Giant arriving at the "Home of the Little Giant" after record run. See page 313.



Loading the ton and a half of Motoreze Lubricating oil after record run. See page 313.



### A Record Economic Run.

The economic run made by the Little Giant Truck from San Francisco to Los Angeles, after its journey over the Lincoln Highway from Chicago, was referred to in our last number.

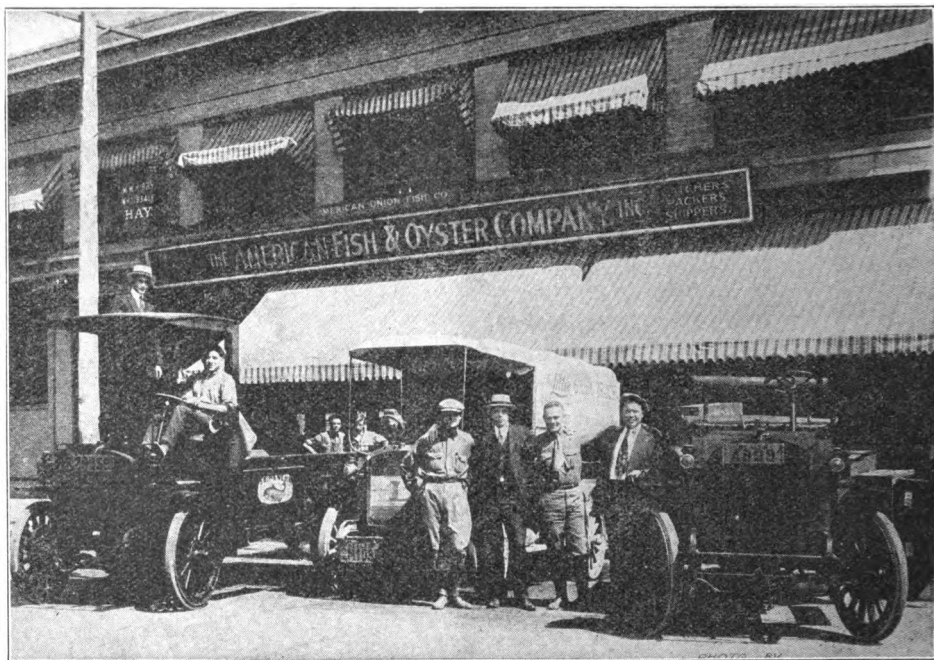
It will be remembered that the 492 miles of mountain roads were covered in 29 hours 30 minutes running time, averaging 16 $\frac{2}{3}$  miles per hour. The most remarkable feature of this record trip was the low cost of operation, which totaled \$4.26, or less than one cent per mile. This was due in part to the cheap grade of distillate used—Union Distillate—and only six gallons of that. Four gallons of Motoreze lubricating oil and seven quarts of water made up the other items.

In the upper view of the opposite page, Mr. H. L. Miller, Los Angeles representative of the Little Giant, is shown extending the glad hand to Messrs. Phillips and Beardsley, who have just arrived. In the lower view,

the ton and a half of Motoreze Lubricating Oil, constituting the load of the Little Giant, is being unloaded at the warehouses of the Union Oil Company, who have three Little Giants in daily service.

The view above shows the Little Giant beside one of the 55,000-gallon tanks of the Union Oil Company.

A son of Erin was digging post holes one day when the boss rambled along to size up the job. Then, of course, some elocution. "How are you making out, Pat?" asked the boss, critically examining the hole. "Foine as silk," answered Pat, keeping right on with his work, "as yez will notice yersilf." "The work looks all right, Pat," jokingly responded the boss; "but do you think you will ever be able to get all that dirt back in the hole again?" "No, sor," came the rapid reply of Pat, "not as it is now, sor; but it's me intintion to dig the hole a little daper."



Little Giant Lincoln Highway Truck and party lined up in front of American Union Fish company's establishment, Los Angeles. This firm has nine Little Giant Trucks in daily service.

### The Bluff That Failed.

Pat was a new man in camp. Saturday night the boys were lined up to the bar and just as Pat poured his whiskey a "friend" yelled, "Fire out in front." Pat ran to the door, looked out and returned. His whiskey was gone! Pat ordered another. "Man dropped dead," yells another "friend," rushing in through the door. Pat satisfied his curiosity and found on his return that his liquor had again disappeared. "Some joker," said Pat, "but I'll fool 'em, if they ever spring that trick on me ag'in." Pat called for his drink and then wrote on a card, "I spit in this glass," and placed the card over the well filled tumbler. Pat walked to the door in response to another "call" and returned.

He was gratified to note that the liquor had not been disturbed, and quaffed it with relish. As he smacked his lips, he looked on the other side of the card, on which he read this delightful intelligence in the uncertain scrawl of some "friend": "So did I."

### Working With a Mike-rometer.

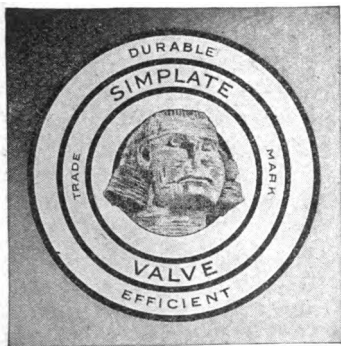
At one of the factories of the Chicago Pneumatic Tool Company, a new employe who had only recently immigrated from Ireland, was asked by the foreman to measure a wall, and was given a rule for the purpose. Mike returned with the information that the wall was "as long as me rule, me arms and two bricks." He was next day transferred to another department, where accurate measurements are seldom taken.

### He Wasn't a Storekeeper.

They tell a story about a country lad who went to New York and tried for a job on the police force.

One of the questions was: "A man buys an article for \$12.25 and sells it for \$9.75; does he gain or lose on the transaction?"

After pondering over the question, our rural friend finally answered in this way: "He gains on the cents, but loses on the dollars."



# SIMPLATE

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**"Chicago Pneumatic"**  
**Compressors**

**Durable — Efficient — Noiseless**

Send for Bulletin 213, giving  
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INNER VALVE  
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INDEPENDENT  
OF INTERMEDIATE &  
OUTER VALVE

LARGE PORTS IN  
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MINIMUM RE-  
STRICTION TO  
THE FLOW OF  
THE AIR FROM  
VALVE —



METHOD OF GUIDING

VALVE STUD  
NUT-A-L-A-M  
STANDARD —  
WITH SPLIT  
PIN COMPLETES  
A RIGID CON-  
STRUCTION

VALVE KEEPER  
OF SPECIAL MAT-  
ERIAL HAVING  
SUPERIOR WEAR-  
ING QUALITIES  
AND HIGH TENSILE  
STRENGTH

### SIMPLATE

INTERMEDIATE VALVE  
ENTIRELY  
SEPARATE AND  
INDEPENDENT  
OF INNER AND  
OUTER VALVE

OPENINGS OVER  
SPRING RECESS  
INSURE CLEAN  
SPRING POCKETS  
NO TENDENCY  
FOR CARBON DE-  
POSIT ON SPRING

OUTER VALVE  
ENTIRELY  
SEPARATE AND  
INDEPENDENT  
OF INTERMEDIATE &  
INNER VALVE

VALUTE SPRING  
OF CRUCIBLE-  
STEEL - DRAWN  
AT PROPER TEM-  
PERATURE AND  
SUBJECTED TO  
RIGID COMPRES-  
SION TESTS

NARROW SEAT  
INSURES A  
TIGHT JOINT  
IN AIR CYLINDER  
WITHOUT THE  
USE OF GASKETS

VALVE SEAT  
OF SPECIAL  
METAL-HAVING  
SUPERIOR WEAR-  
ING QUALITIES  
AND HIGH TEN-  
SILE STRENGTH

VALVE STUD  
OF NICKEL STEEL  
PRESS FIT IN  
VALVE SEAT IN-  
SURING TIGHT-  
NESS AND EASE  
OF ASSEMBLING

LARGE FREE  
AREA THROUGH  
PORTS IN THE  
VALVE SEAT  
RESISTANCE TO  
THE FLOW OF  
AIR IS SLIGHT

THREE GUIDES  
FOR EACH VALVE  
WITH PROPER  
FIT TO PREVENT  
VALVE COCKING  
OR OTHERWISE  
FAILING TO SEAT

**Advantageous Features of Simplate Valves**

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## After Inventory

We find ourselves overstocked on various items of raw material as listed below and solicit inquiries for prices which we are sure will be attractive.

### VALVES.

50 1½"	Brass Angle Valves.	150 ¾"	Brass Angle Valves.
25 1"	Brass Angle Valves.	200 ¼"	Brass Angle Valves.
150 ¾"	Brass Angle Valves.	50 2"	Brass Angle Valves.
5 7"	Iron Body Crane Angle Valves, (Flanged Type.)		
2 7"	Iron Body E. C. & B. Angle Valves, (Flanged Type.)		
16 3"	Screwed Type Kelley and Jones Globe Valves, (Iron Body.)		
2 2"	Flanged Crane Globe Valves, (Iron Body.)		
2 2"	Flanged W. T. Co. Globe Valves, (Iron Body.)		
1 3'	Flanged Powell Globe Valves, (Iron Body.)		
1 3"	Flanged Crane Globe Valves, (Iron Body.)		
10 3"	Flanged W. T. Co. Globe Valves, (Iron Body.)		
1 3½"	Flanged W. T. Co. Globe Valves, (Iron Body.)		
5 4"	Flanged W. T. Co. Globe Valves, (Iron Body.)		
6 7"	Flanged Jenkins Globe Valves, (Iron Body.)		

### UNLOADERS.

16 2"	Globe Unloaders.	6 2"	Richards I. and P. Unloaders.
2 3"	Globe Unloaders.	3 3"	Richards I. and P. Unloaders.
5 4"	Globe Unloaders.	7 3½"	Richards I. and P. Unloaders.
2 4½"	Globe Unloaders.	2 4"	Richards I. and P. Unloaders.
3 3"	Angle Unloaders.	3 4½"	Richards I. and P. Unloaders.

### TUBING.

100 Pcs. 2⅜" o.d.; 2 1/16" i d; 5/32" wall, (Ohio Seamless), 19" long.

### U. S. STANDARD SEMI-FINISHED HEX NUTS.

250 2"	Standard.	240 2¼"	Check.
150 2¼"	Standard.	300 2½"	Check.
200 2"	Check.		

### TODD SPIRAL PACKING.

10 Boxes ⅝"	4 Boxes ½"
4 Boxes ⅞"	2 Boxes ⅝"
2 Boxes ⅞"	

### ELECTRICAL EQUIPMENT.

- 18 Model B Motsinger Auto Sparkers, (Second Hand, in good condition.)
- 300 Model 02 Wico Igniters.
- 1 Genl. Elec. Type "I", Four Pole, 20 H.P., 900 R.P.M., 3 Ph., 30 Cycle, 440 Volt, Form "K" Squirrel Cage Induction Motor, No. 160445 (New.)

### BELT LACING MACHINE.

- 1 Birdsboro Belt Lacing Machine, (Practically New.)

## CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Building  
CHICAGO

BRANCHES EVERYWHERE

52 Vanderbilt Ave.  
NEW YORK

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**From Our Railroad Department.**

Mrs. Norah Mulvaney one day met her friend, Mrs. Bridget Carr, who had in her arms her twelfth child.

"Arrah now, Bridget," said Norah, "an' there ye are wid another little Carr in yer arms."

"Another it is, Mrs. Mulvaney," replied her friend, "an' it's me that's hopin' 'tis the caboose."

**Losing Faith.**

Old Lady—"I don't believe this sure-cure tonic is a-goin' to do me any good."

Friend—"It's highly spoken of in the papers."

Old Lady—"Yes; but I've taken forty-seven bottles, and I don't feel a bit better. I tell you what it is, Sarah; I'm beginning to think these newspaper editors don't know everything."

**Explanation.**

"Do you mean to say such a physical wreck as he gave you that black eye?" asked the magistrate.

"Sure, your honor, he wasn't a physical wreck till after he gave me the black eye," replied the complaining wife.

Mary had a little lamb,

A lobster and some prunes,

A glass of milk, a piece of pie,

And then some macaroons;

It made the naughty waiters grin

To see her order so,

And when they carried Mary out

Her face was white as snow.

**The Lure of the Mirage.**

A traveler, thinking to be facetious, told the darky ferryman that he had no money to pay his passage.

"But," said the colored man, "it don't cost only five cents to cross dis ferry."

"I haven't got any money at all."

Suddenly the darky looked resigned.

"Don't you mind, boss," said he earnestly, "because a man dat ain't got five cents is jes' as well off on dis side of the river as on de odder."—**Exchange.**

**Wouldn't You?**

Passing through a military hospital, a distinguished visitor noticed a private in one of the Irish regiments who had been terribly injured.

To the orderly the visitor said: "That's a bad case. What are you going to do with him?"

"He's going back, sir," replied the orderly.

"Going back!" said the visitor, in surprised tones.

"Yes," said the orderly. "He thinks he knows who done it."

**Appraised.**

Callers were at the door and Bobbie was told to show them into the parlor. He did so, and while his mother was fixing herself up, he sat there rather embarrassed. Presently, seeing the visitors glancing around the room, he said:

"Well, what do you think of our stuff, anyway?"

Corporal (to soldier reporting sick)—"What's the matter with you?"

Tommy Atkins—"Pain in my habdomen."

Corporal—"Habdomen be 'anged! Stomick, you mean. It's honly hofferers as 'as habdomens."—**Boston Transcript.**

Placard at a moving-picture show: "Young children must have parents."

In a barber's shop window: "During alterations patrons will be shaved in the back."

Sign in a Tremont street store: "Empty boxes—suitable for Christmas gifts."

In a tailor's shop: "We dye for others; why not let us dye for you?"

In a clothing store: "These pants will look better on your legs than on our hands."

A silversmith has a place next door to a restaurant. The former having put up a placard: "Jewelry of all kinds plated," the restaurant keeper followed with this: "Oysters and little neck clams plated."



Truth and trouble play no favorites.

It's easy for a woman to paint a pretty face—if she has it.

Only a woman of tact can smile when she hears a rival praised.

And many a good husband has the courage of his wife's convictions.

Sometimes a man's past takes a short cut and heads off his future.

A woman isn't necessarily level-headed because her hat is on straight.

But a man usually drops his prosperous look when a bill collector calls.

A homely girl can seldom understand why people think some men are mashers.

The street faker reaps a golden harvest when he faces a crowd that wants something for nothing.

What has become of the old-fashioned boy who would rather stay home and work than go to school?

After acquiring all the knowledge he can from books, many a man takes a postgraduate course by marrying a widow.

Agitation is the antidote for stagnation.

And many a single man is guilty of double dealing.

Smiles make a better salve for trouble than do frowns.

Frequently a man thinks he is charitable because he gives advice.

A little change is a good thing, but a big roll of bills is better.

It does seem queer that most of the "good fellows" have a lot of bad habits.

Perhaps a man can write a sensible love letter, but he never does.

Sometimes two women can stop talking about each other long enough to swap kisses.

Such things as come to the man who waits are seldom the things he has been waiting for.

If every man were taken at his own value there wouldn't be half enough halos to go around.

Every time a woman injects an exclamation point into her conversation she gathers momentum for a fresh start.

Sometimes you can judge by appearances. Many a woman appears to be strait laced because she really is laced that way.

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# IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Truck  
By THE IDEAL POWER PUBLISHING COMPANY  
Fisher Building, Chicago

VOL. XI

JANUARY, 1916

No. 11

## Class N-SO "Chicago Pneumatic" Fuel Oil Driven Compressors

To produce air compressors with lower operating costs and of lower first cost than any previously known—machines well suited to rough heavy duty under all sorts of abnormal conditions, but with all the operating qualities of economy and simplicity necessary to high grade stationary performance—has been the ideal of the engineers of the Chicago Pneumatic Tool Company, Chicago, in the development of their class N-SO Fuel Oil Driven Compressors.

The importance of these "Chicago Pneumatic" N-SO compressors lies in the fact that they supply a demand not met by any other machines. This is attributable to the fact that they operate on the lowest grades of fuel distillates.

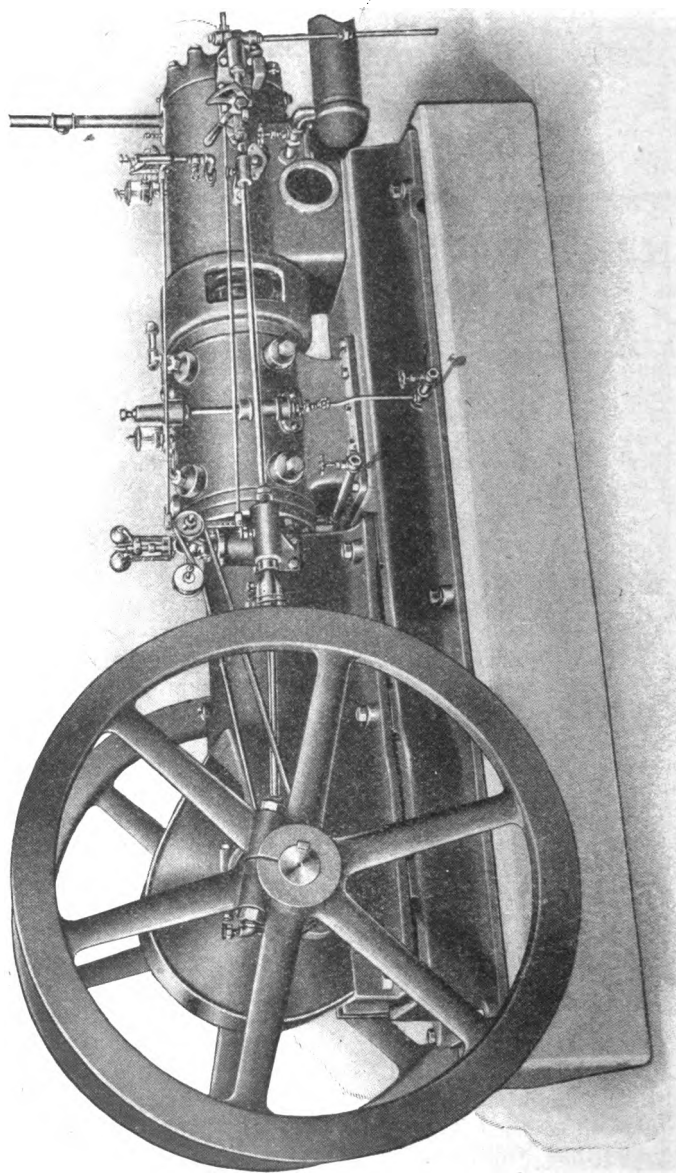
The compressors are guaranteed to run on any mineral oil of 28° Beaumé scale or lighter containing not over one per cent sulphur. There are a number of oils well below 28° Beaumé scale on which they will operate satisfactorily, but this depends upon the characteristics of the particular oil, such as its asphaltum content, freedom from sand, etc., so that a general guarantee cannot be given, though recommendations for heavy oils can and will be made.

Most of the common crude oils, fuel

oils and residuums are naturally included in the above guarantee. A few of the well-known oils particularly suited to the operation of the compressors are as follows: Star Oil, Diesol, Calol, Stove Oil, Gas Oil, Kerosene, and all of the distillates between Kerosene and Lubricating Oil.

A number of the above fuels are obtainable for three cents per gallon, so that N-SO compressors are warranted to compress air to 100 pounds pressure at a cost not exceeding 56 cents per day of nine hours for each 100 cubic feet per minute of free air delivered to the receiver. These figures are so astonishingly low as to seem almost incredible. The facts, however, show that there are dozens of these machines in service with daily records of fuel consumption that bring their costs of operation well under the amount stated. The immediate effect of these performances has been to create a heavy demand for the N-SO's, and it seems certain that they will open up entirely new fields for the application of compressed air.

Class N-SO Compressors are of the horizontal, straight line, single stage type with compressing cylinder bolted to the main frames and closely connected in tandem to the power ends.



Class N-SO "Chicago Pneumatic" Fuel Oil Driven Compressor—stationary type.

The propulsive cylinders are of the valveless, two-cycle, low compression design. Ignition is produced by a patented, positive acting hot-plate system, that eliminates all electric apparatus, such as magnetos, timers, mixers and spark plugs.

Just as in the Diesel engine, combustion takes place at the end of the compression stroke. The importance of this exclusive feature of design is immediately apparent. Air only is compressed in the cylinder of an N-SO, and combustion is so complete by the time the exhaust port is opened that the fuel loss is negligible. The result is attained through the medium of a small oil pump which injects the fuel against the hot plate on the piston as it approaches the end of the compression stroke. Increased economy is obtained by the use of water with the fuel oil. The quantity of both oil and water admitted to the combustion chamber is controlled by a fly-ball governor.

The outstanding features of the compressing cylinders are, of course, the patented "Chicago Pneumatic Simplate" flat disc air inlet and discharge valves. These are the valves which have been credited with making possible the highest compressor speeds and efficiencies known. They are the only valves obtainable in American made compressors of concentric plate construction. They are guaranteed for three years, and the Company's records show that with 20,000 valves in constant use there has not been a serious complaint to adjust or cause indicated for any appreciable modification in design.

N-SO Compressors are made in both single and duplex machines. Single compressors come in six standard strokes, 8, 10, 12, 14, 18 and 21 inches. The smaller sizes may be tank mounted, and the larger types set on skids so that their use is not confined to stationary requirements.

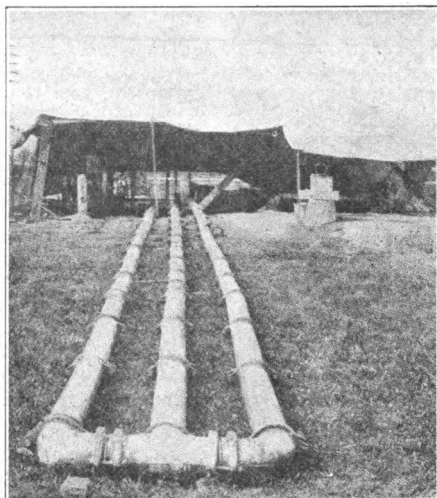
The adaptability of these machines to severe service conditions renders them particularly attractive to mines and con-

tractors, but they are equally desirable for railroad and industrial shops, for pumping oil and water by various systems, and for use wherever cheap compressed air can be utilized.

The manufacturers issue a bulletin describing these compressors which they will be pleased to supply upon request.

### Using Compressed Air to Clean Sand Out of Driven Wells at Detroit.

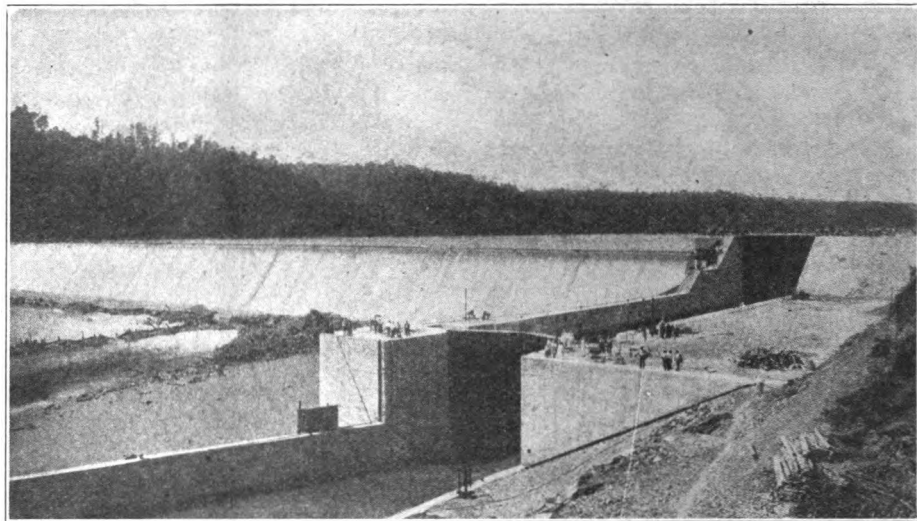
Real estate operators, on the outskirts of Detroit, Mich, frequently install water works systems to supply new subdivisions. The water supply is easily secured from driven wells sunk to the



View of Air Compressor Plant Used in Freeing Driven Wells of Sand at Detroit, Showing Improvised Air Reservoir.  
Compressor Used was a 7x10 Class H. S. G. "Chicago Pneumatic" Gasoline Driven.

water-bearing sands which underlie practically the entire southern peninsula of the State. Such a system was recently installed in Mr. B. E. Taylor's Strathmore Subdivision of Detroit. The system was designed by Patrick W. Keating, Consulting Engineer, and installed by W. L. Dillon, 1503 Kresge Bldg., Detroit.

The supply in this case was derived from three 8-in. wells having an average



Lock 17 on the Warrior River. This lock has a 65-foot lift and forms a lake over 60 miles long, giving 6-foot navigation the year round from the Gulf at Mobile to the coal and iron fields of the Birmingham district. "Giant" Fuel Oil Engine operates it.

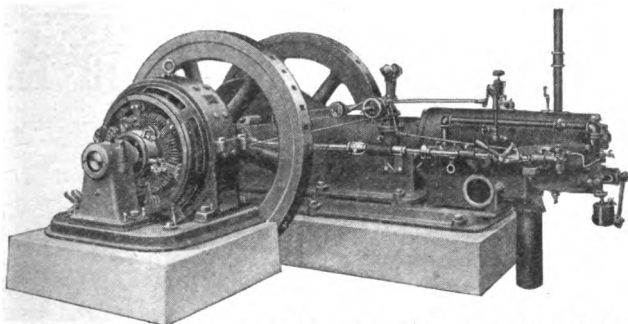
depth of about 220 ft. The wells are cased to the full depth and are provided with Cook well screens at the bottom. Two of the wells were placed in service shortly after their completion and considerable trouble was experienced from the presence of sand. The third well was drilled in January, 1915, and a pumping test developed a flow from this well of 300 gals. per minute. It was not put in service until July, 1915, and at that time the lower 15 ft. of the well was completely filled with packed sand. So much trouble had been experienced from sand in the wells under operation and, it being impossible to utilize the third well on account of the large amount of sand it contained, it was decided to rig up a compressed air plant with which to remove the sand from all the wells.

A view of the air compressing plant is shown herewith. The compressor was of Chicago Pneumatic Tool Co. manufacture. As no air receiver was at hand one was improvised, as shown in the view, from 216 ft. of 6-in. Universal cast iron pipe. An average air pressure of 150 lbs. to the square inch was maintained. The third well, which

had stood idle for six months, was the hardest to clean and as the methods employed in cleaning it were used on all the wells they are here described.

A 2-in. wrought iron pipe was taken off the improvised air receiver and extended, through a bushing in the well casing, down to the middle of the sand in the well, where it terminated in a 1-in. nozzle. Air was then admitted to the sand under 150 lbs. pressure and water and sand were forced out of the upper end of the well casing, which was left open. This method was continued as long as it did any good and a considerable portion of the sand was removed in this manner. A Fairbank-Morse electrically driven plunger pump was then attached to the upper end of the casing and placed in operation while air was again forced into the casing below this suction connection. This was continued until the well was free of sand. On this well two days were required to remove all the sand and in making the plant changes mentioned.

For this information we are indebted to Mr. W. E. Holland of the Chicago office of the Central Foundry Co. of New York City.—*From Engineering and Contracting.*



"Giant" Fuel Oil Engine direct connected to D.C. Generator. Installation referred to subjoined article is of this type.

On opposite page is shown Lock No. 17, Warrior River, near Tuscaloosa, Ala., which was opened for navigation in May, 1915. The lock gates are operated by electricity and as the vast water available has not as yet been utilized for generating electricity it was necessary to put in a generating set to supply the needed energy to operate the lock gates and for lighting service.

The U. S. Government officials, after exhaustive investigation, decided that the Type A-O Giant Oil Engine, made by the Chicago Pneumatic Tool Company, was the best and most efficient engine for this purpose and placed order for a 45 h.p. Oil Engine and generator direct connected, with generator mounted on engine shaft. This is installed in the small shed shown on inner wall of the lock near the top, or crest of the dam. This order was given in January, 1915, and the plant was installed a few months later, since when it has been in continuous operation as required, day and night, with very satisfactory results.

The work in building the dam shown, together with other locks and dams in the Warrior River was under the direct supervision of Asst. United States Engineer, G. K. Little, stationed at Tuscaloosa, Ala., and to him and his able corps of assistants should be given the full credit for the successful completion of this work.

The excavating for and building of the dam was done by the Hardaway

Contracting Company of Columbus, Ga., the steel lock gates and machinery were designed and planned by Capt. Little's force and the gates made complete and installed by the government shop force at Tuscaloosa. These gates are a perfect fit when closed, allowing no water to leak through, in fact a man can walk across the lock aprons without getting his shoes wet, and figuring on the vast pressure exerted by the wall of water back of these gates, shows the efficiency of the government corps in designing, fabricating and erecting same.

The opening of the Warrior River to navigation is of vast importance to Northern Alabama and especially to the ore and coal fields of the Birmingham district, and immediately was put into use by some of the larger corporations as the record of over one hundred vessels and barges passing through this lock in the first month will attest, and the traffic and tonnage is increasing constantly, only being held back by the lack of barges at the present time.

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#### Otherwise Not.

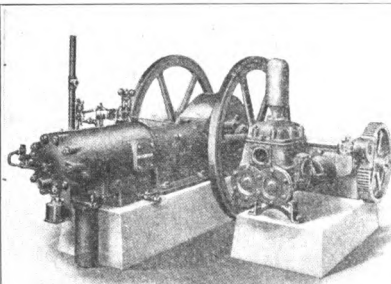
"Why do you want to get divorced?"  
"Because I'm married."

---

Wild-Eyed Customer—"I want a quarter's worth of carbohic acid."

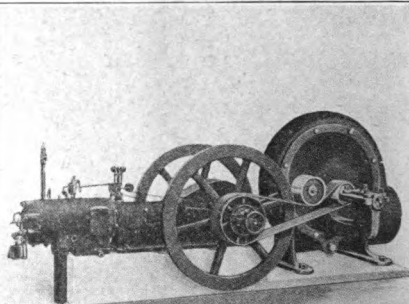
Clerk—"This is a hardware store. But we have—er—a fine line of ropes, revolvers, and razors."

# A Few Applications of Giant Oil Engines



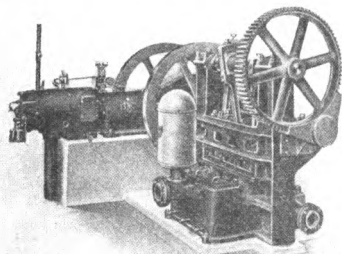
Giant Oil Engine Driving Gardner Pump

We furnish complete installations



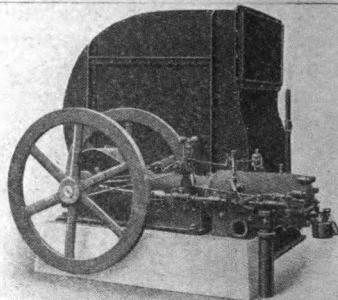
Giant Oil Engine Operating Volume Exhauster

An ideal short belt drive outfit



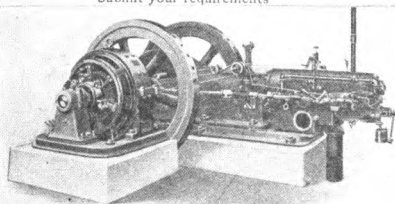
Giant Oil Engine Operating Goulds Triplex Pump

Submit your requirements



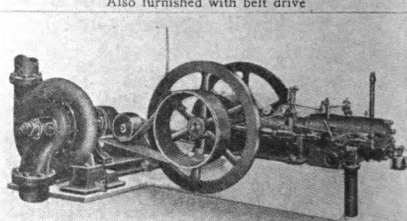
Giant Oil Engine Operating Planoidal Fan

Also furnished with belt drive



Giant Oil Engine Direct Connected to Generator

Regulation guaranteed within 3 per cent variation  
This combination also furnished with belt drive



Giant Oil Engine Operating Alberger Pump

We supply complete installations  
for any form of pumping service

ASK FOR QUOTATIONS

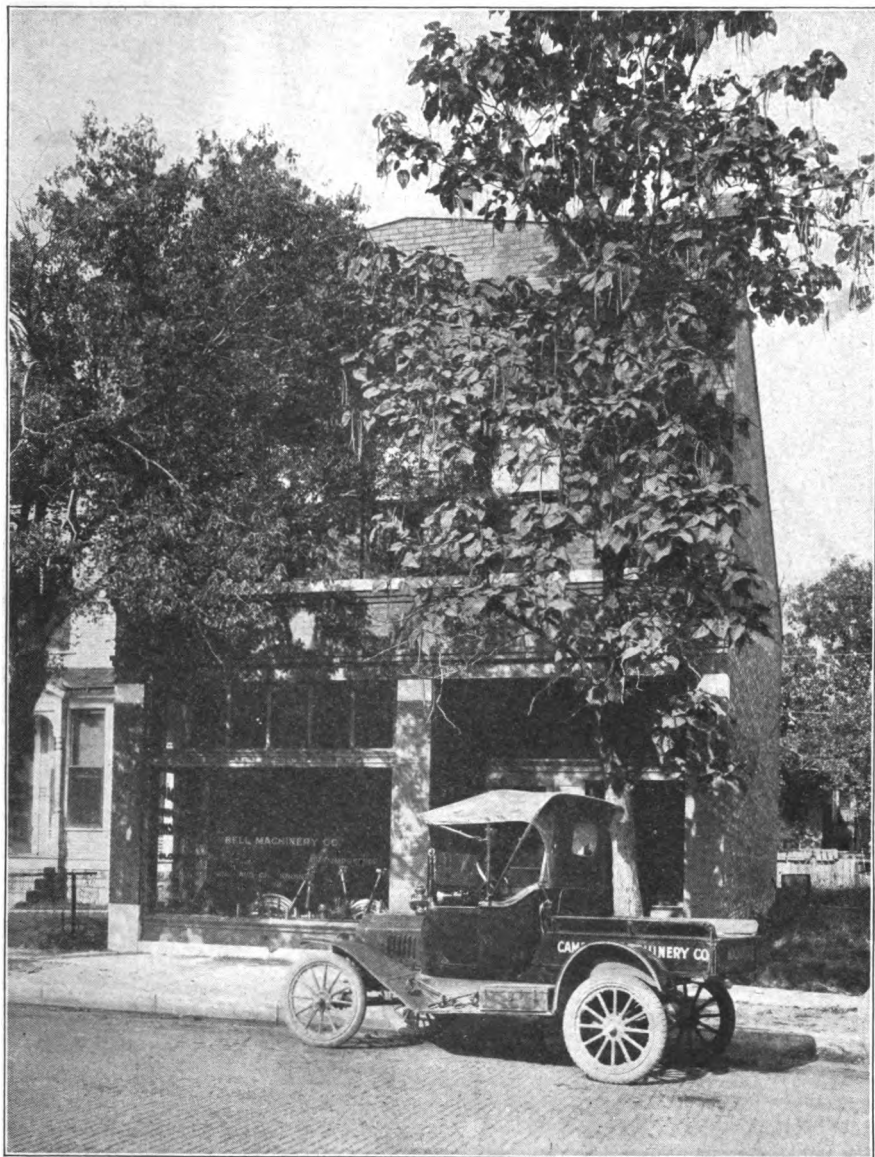
## Chicago Pneumatic Tool Co.

1014 Fisher Bldg., Chicago

Branches  
Everywhere

52 Vanderbilt Ave., New York

When writing to advertisers please mention Ideal Power.



"The above is a photograph of the Campbell Machinery Company's place of business at Joplin, Missouri. This enterprising firm was organized last June and started in business July 1st. They are the sole representatives of the Chicago Pneumatic Tool Company in the Joplin district. Mr. J. B. Corby is president of the new company, and Mr. J. E. Campbell is treasurer and general manager. Mr. Corby is also president and treasurer of the Corby Supply Company, who has represented the Chicago Pneumatic Tool Company in the southwest with headquarters in St. Louis for the past fifteen years. Mr. Campbell has a wide acquaintance among the machinery interests in the Joplin territory, where he has been selling compressed air machinery and rock drills, and is thoroughly acquainted with the conditions and has a wide acquaintance among the mine operators, and their patrons can be assured of the best of service and courteous attention, and they will be ready at all times to give them the benefit of their wide experience."





### THE CITY W. C. K. BUILT.

#### The Work of Westinghouse, Church Kerr & Co., Engineers and Constructors.

The buildings shown in this photograph were designed and constructed in their entirety by W. C. K.

This W. C. K. city cost \$50,000,000. That's equal to the total assessed valuation of improvements in the city of Dayton, Ohio, or Worcester, Mass. There are only 33 cities as large in the whole United States.

All the wage-earners of Hartford, Conn., could find employment here.

Over fifty-six million square feet is under roof.

The building materials and equipment made over 1,000,000 tons of freight. (W. C. K. can buy to advantage.)

To haul all this at once would require a solid train 590 miles long. (W. C. K. have an experienced traffic department.)

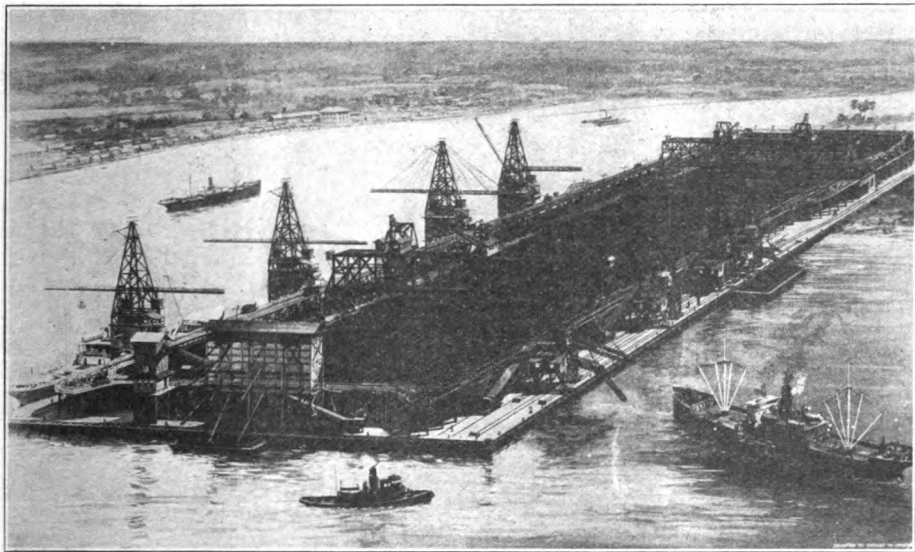
This W. C. K. city is a big city to be the work of a single firm of engineers and constructors. But, big as it is, it by no means represents all the work of W. C. K. Millions of dollars of work does not appear in this picture where W. C. K. did only a part of the work—not the whole. No building appears in this group that W. C. K. did not design and construct in its entirety.

W. C. K. have had some experience that ought to be of service to you in your particular problems.

WESTINGHOUSE CHURCH KERR  
& CO.

Our interest in the above lies in the fact that Boyer Long Stroke Riveting Hammers and Little Giant Air Drills were important factors in the erection of these buildings—and we congratulate W. C. K. Co. on the wonderful showing they have made.

CHICAGO PNEUMATIC TOOL CO.



New Cristobal Coaling Station at the Panama Canal on which Boyer Hammers and Little Giant Drills were used exclusively.

#### The New Cristobal Coaling Station at the Panama Canal.

The Cristobal Coaling Station of the Panama Canal is rapidly nearing completion. It is located on Mina Island with the old French Canal on one side and the Panama Canal proper on the other. The four towers shown on the left of the photograph are traveling unloading towers and have a capacity of 250 tons each per hour, making a total unloading capacity of 1,000 tons per hour. The three towers shown at the right of the photo are re-coaling towers, each having a capacity of 250 tons per hour. At the outer end of the pier or station there is a submerged pit having a storage capacity of 50,000 tons of coal which is for the exclusive use of the U. S. Navy. This coaling station is about 1,400 feet long by 300 feet wide, and about 14,000 tons of steel have been used in its construction. The steel work was fabricated and the erection work was done by the American Bridge Company, and Boyer Hammers and Little Giant Drills were used exclusively.

#### The Wagging Tongue.

The wagging tongue is the oldest and greatest advertising medium in the whole world.

In this country it has a circulation of 100,000,000.

It cannot be bribed.

Unlimited cash cannot buy it.

Service is the only coin by which it can be bought.

Courtesy will secure its eternal good will.

Its active support can be bought with fairness.

Business integrity will purchase its boundless influence.

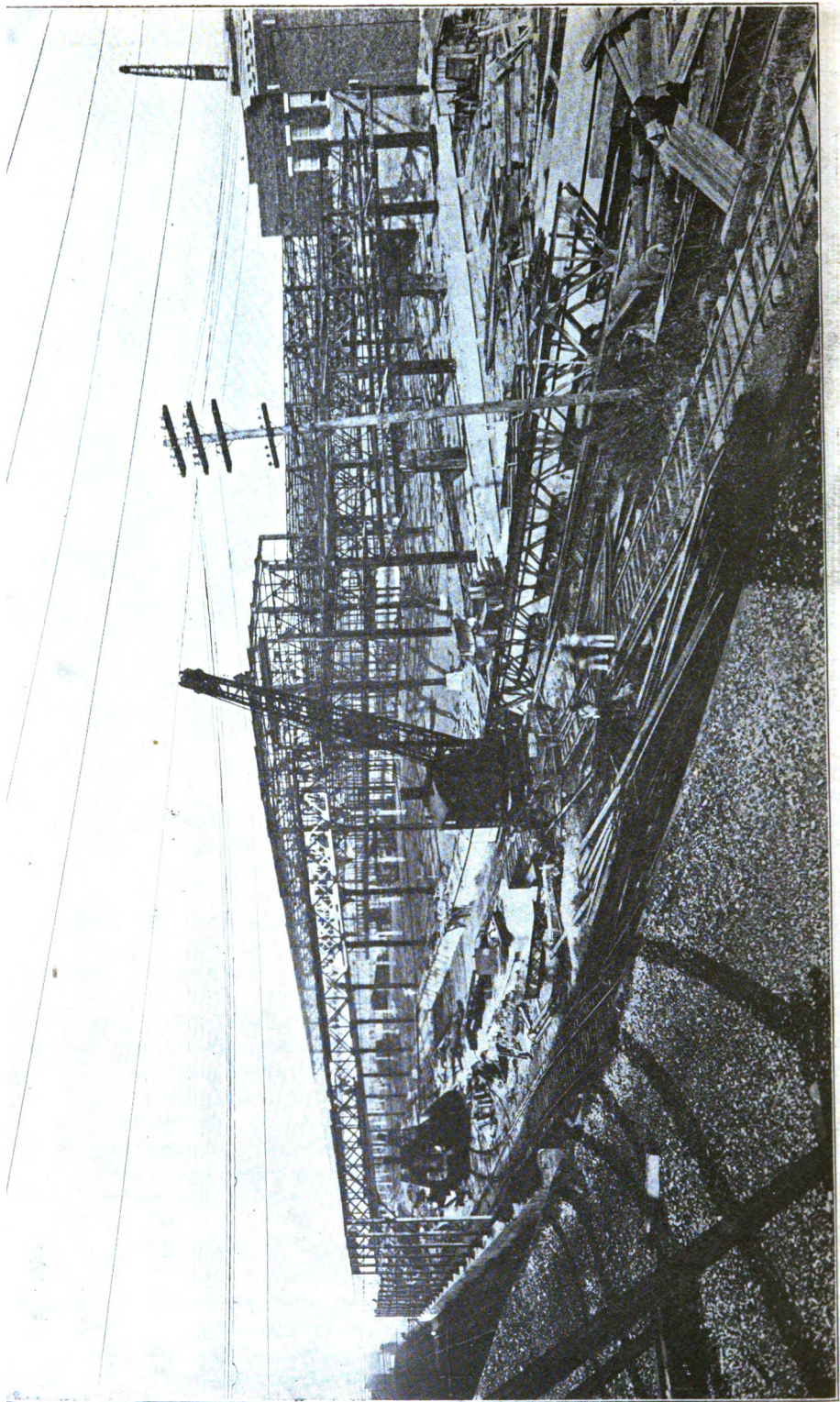
It is always positive—either for or against.

It speaks out the truth about you, your merchandise, your business methods, whether you like it or not.

It won't take your word for what you are.

It judges what you are by what you do.

In a collective sense, the wagging tongue is always right, and if its voice is raised against you, it is generally deserved.—Exchange.



New Ocean Steamship Terminal at Savannah, Ga., erected by the Virginia Bridge and Iron Co. Its 80,000 rivets were driven by Boyer Hammer.



### New Terminal at Savannah.

On the opposite page is a progress view of the Ocean Steamship Company's New Terminals at Savannah, Ga. This photograph was taken Sept. 13th, 1915, and shows practically all of the north pier sheds in place. These terminals are being erected by the Virginia Bridge & Iron Co. of Roanoke, Va. About 3,500 tons of steel is required for the job and 80,000 rivets which are being driven exclusively by Boyer Hammers.

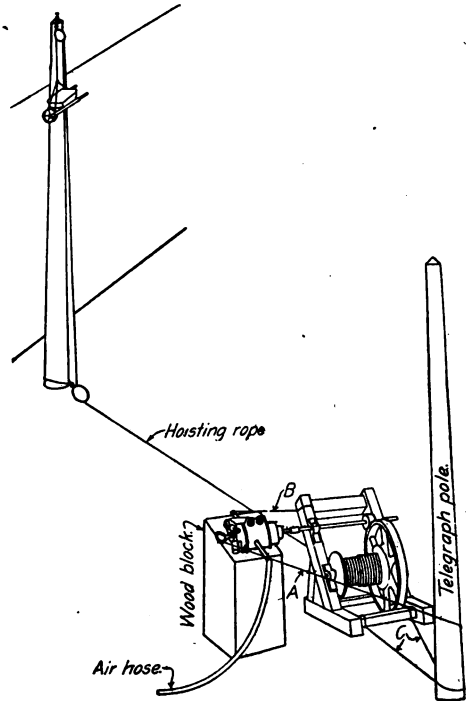
The steel work for these terminals is fabricated and erected by the Virginia Bridge & Iron Co., and to date about 3/5 of the steel is in place. The general design provides for a slip 1,020 feet by 225 feet, with pier sheds and warehouses about 215 feet wide, extending both sides and around the land end.

### Using a Pneumatic Drill Motor as a Hoisting Engine.

By V. T. Kropidlowski.

Chicago & North Western, Winona, Minn.

It is surprising to note the many uses to which an air motor may be adapted. Only a short time ago a bridge and building gang was engaged in renewing a gravel roof on a machine shop. Gravel was being hoisted to the roof by the wheelbarrow-full by three men working with a windlass. The idea occurred to someone to replace the three men at the windlass with a motor secured from the shops. As this motor requires but one man to operate it, the two men were relieved for other work while three wheelbarrows of gravel were handled in this way to one by the men. The motor was attached as shown in the accompanying sketch. The windlass was anchored to a nearby telegraph pole by two ropes "C," as shown in the sketch. The motor was placed on a wooden block to bring it to a height so that its socket was on a level with the crank



A novel application of "Little Giant" Drill Motor.

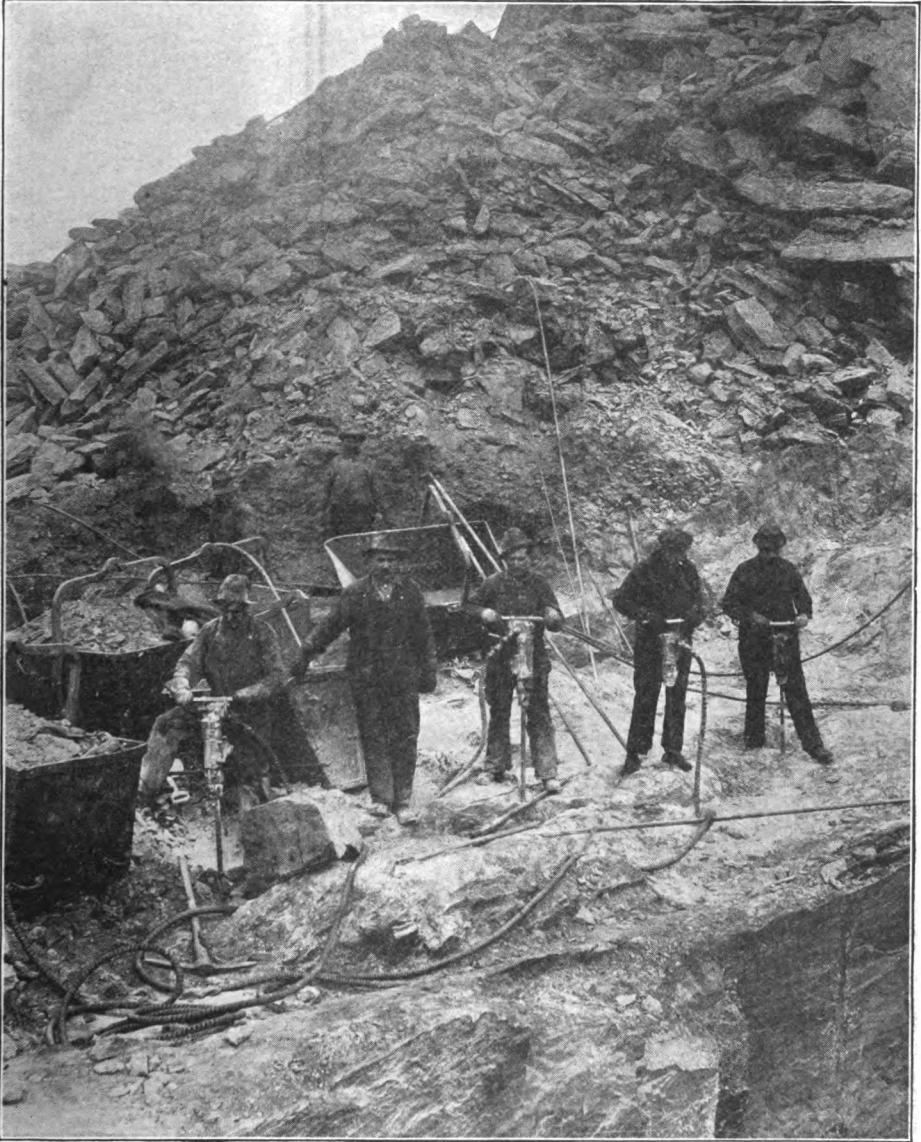
shaft of the windlass. The motor was then anchored to the block with a light chain, and to keep it from moving it was further held in place by wires "A" and "B." While it was necessary to fit a square socket to the crank shaft, this required very little work, as a Morse taper with a square socket was secured from the shop and this was made to fit by filing the square of the crank shaft slightly. At first a No. 2 Little Giant motor was tried, but this was found too small and a No. 0 motor was substituted. This latter motor was able to hoist a heaped wheelbarrow of gravel without any difficulty.—*Railway Age Gazette*.

"Charles," said the teacher, "do you know what the word 'celerity' means?"  
 "Yes'm," said Charles. "It's something you put hot plates down with."

## Hammer Drills at Work



La Mura Contracting Co., cutting a sewer through rock in 216th St., Bronx, New York, with the aid of "Hammer" Hammer Drills. Those familiar with that locality will recognize Spuyten Duyvil Creek and the upper end of Manhattan Island, with the Hudson and its Fallisades in the distance.

*Boyer*  
**More Hummers at Work**  
*Chicago*

*Smiley*  
This view shows a battery of "Hummer" Hammer Drills in operation cutting a street through solid rock at 149th St. and Eagle Ave., Bronx, New York, under the direction of Fred. Schneider, contractor. "Hummer" Hammer Drills are doing their share in the transformation of New York's waste places into habitable localities.  
*Little Giant*

# IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air  
and Electrical Appliances

BY THE

**IDEAL POWER PUBLISHING CO.**  
1014 FISHER BUILDING  
CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. XI JANUARY, 1916

No. 11

## TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 50 cents per year

## ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our  
subscription list.

### Little Giant Has New Home.

"Due to the general revival of business, all our plants," says W. O. Duntley, President of the Chicago Pneumatic Tool Company, "are working at full capacity and several of them have put on full night shifts. The plant at Chicago Heights, where we build the Little Giant trucks, has work up to its capacity for months to come and at the rate orders are coming in, larger manufacturing facilities will have to be obtained."

On January 1st, the motor truck department of the Chicago Pneumatic Tool Company pulled up stakes at 1470 Michigan Ave., and 2427 Calumet Ave., and moved into its own building at 1615 Michigan Ave. The new home of the Little Giant truck, known as the Little Giant Building, is three stories high with a floor space aggregating 15,000 square feet, all of which will be devoted to the activities of the Little Giant Truck.

The showrooms are located on the first floor. The executive and administrative departments occupy the second floor, while the top floor is given over to the service and repair departments. With all branches of the truck department under one roof, greater efficiency in handling the local business will result, and Mr. T. J. Hudson, Jr., who manages the truck department, is highly pleased at the change.

The outlook for the Little Giant is brighter than ever. The year opened

with unfilled orders for hundreds of trucks, and the demand this year has been brisk.

Chief interest is centered on the new line of worm drive Little Giants which are built in two sizes,  $\frac{3}{4}$ -1 ton and 2 ton capacities. In offering this new line, full advantage is being taken of the prestige given it by the adoption of standardized units which enter into the construction.

While the Worm Drive occupies the center of the Little Giant stage at the present time, the original chain drive, Model "H," in one ton and one and a half ton sizes is in great demand and there are many unfilled orders on the books at the present time. In the Model "H" the engine is located under the seat, making an extremely short wheel base possible, a feature on which many buyers insist.

The company is also pushing and marketing its Six Wheel Truck. Foreign orders for these have been given preference during the past year and the future of the six wheel truck—although a radical innovation in truck practice and design—is bright in the extreme.

### Situations Wanted.

First-class tool repair man. Has had four years' experience with large locomotive works. Now in New York, but will go anywhere. Address Ad. 14, Ideal Power.

Married man, 25 years old, has had considerable experience in Hydro plant work, arc lamps, etc. Graduate of I. C. Schools in electric lighting course, wants position in Central Station or Sub-station work as operator. Can furnish first-class references. At present employed. Address Ad. 15, Ideal Power.

A position as foreman in structural iron shop. Have had 15 years' experience in shop management. Can handle men and produce results. Is 35 years of age and married. Address Ad. 16, Ideal Power.



Three-quarter Worm Drive Little Giant Truck, owned and operated by H. E. Scholl, Santa Ana, Cal.

### The Little Giant as an Aid to Prosperity.

"One of the ways, often overlooked, in which society is benefited by Motor Truck Transportation is the increased value it gives to farm land located many miles from market. There are many pieces of land, located 20 to 50 miles distant from prosperous cities, which are admirably suited to produce and small fruit raising but which are lying idle because of their inaccessibility to market by means of horse and wagon. A motor truck will put such farms within easy reaching distance of the market and thus increase many times, the value of the land.

Mr. H. E. Scholl was cultivating a farm about 35 miles from Santa Ana, Cal., his nearest market and obtaining a bare livelihood. Four years ago he purchased a Little Giant truck, which enabled him to easily reach Santa Ana with his goods. Since he has been very successful and has purchased two additional Little Giant trucks, his latest being the new Model 15,  $\frac{3}{4}$ -ton worm drive Little Giant. His success has been entirely due to his Little Giant

trucks as he could not get to market with his goods if he used a horse and wagon."

### Hay Burners for Motive Power.

During the Civil War, according to profane history, a remarkable railway was in operation between Shreveport, La., and Marshall, Tex. The line bore the somewhat ambitious title of the Memphis, El Paso & Pacific. Its rolling stock consisted of three box cars and its motive power was gravity and oxen. The cars were loaded at Marshall, and a yoke of oxen put in the front car. The train then coasted down the long grade from Marshall. At the bottom of the incline the oxen were taken out and set to work hauling the train over the next summit. They then got aboard again and the train rolled merrily down the next grade. The performance was repeated until Shreveport was reached.

Doctor—"I have to report, sir, that you are the father of triplets."

Politician—"Impossible! I'll demand a recount."—Puck.



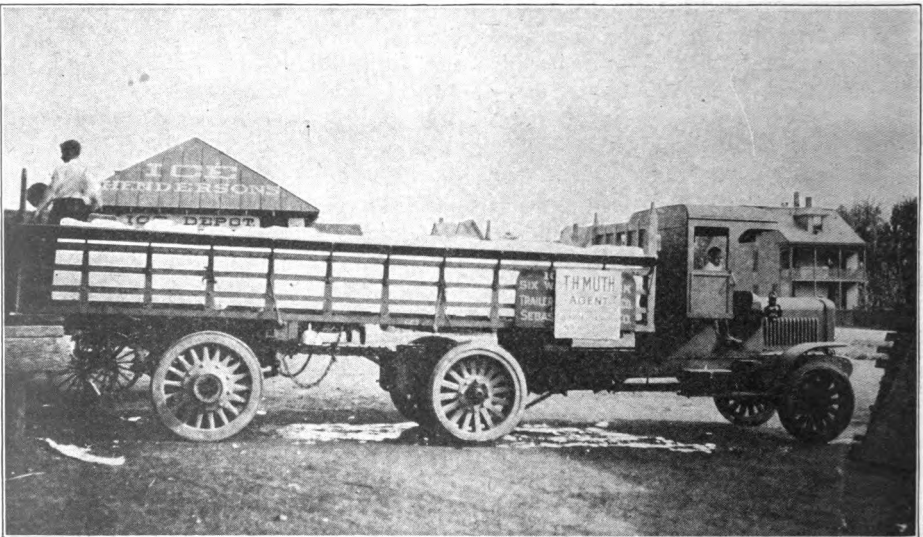
*over*

*Chicago*

## Some Remarkable Performances of Six-Wheel Little Giants



Four-Ton General Motors Truck, equipped with Little Giant Six-Wheel body, hauling one box-car load—165 bales—of hay.



A Four-Ton General Motors Truck, equipped with Little Giant Six-Wheel Chassis, hauling eleven tons of ice.

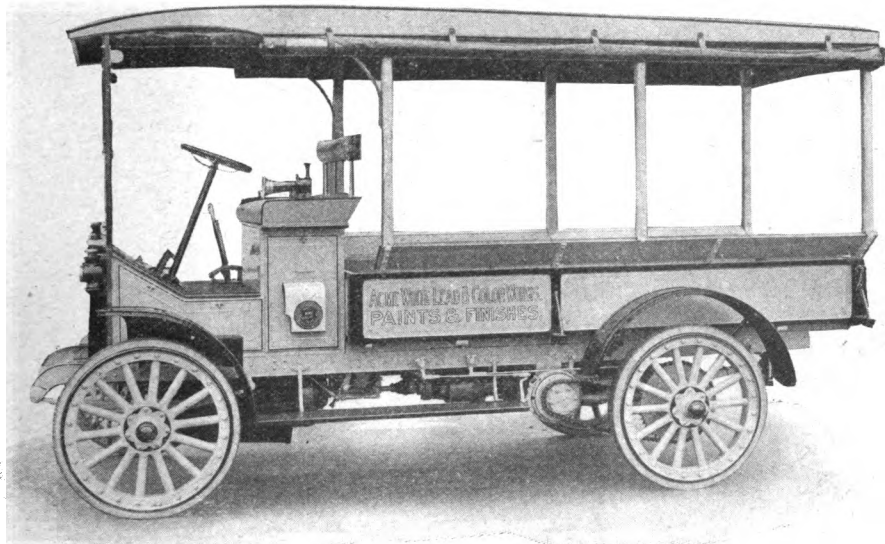
WRITE FOR DETAILS AND PRICES

Chicago Pneumatic Tool Company, 1615 Michigan Ave., Chicago

*Montley*

*Little Giant*

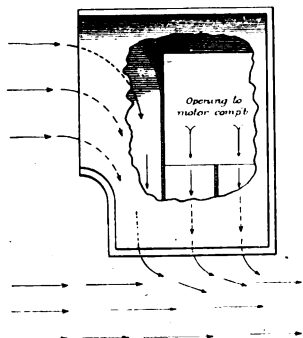
When writing to advertisers please mention Ideal Power.



A Model H Little Giant Truck installed by the Acme White Lead & Color Works. The Garland Exhaust Ventilator, with which all Model H Little Giants are equipped, is shown on side panel just below the seat.

### The Garland Ventilator.

Little Giant Model "H" Trucks are equipped with the Garland Ventilator. The exhaust action of this ventilator is produced by two air currents striking at right angles at a point in front of the opening to the motor compartment, causing a vacuum, into which the heated air is drawn, to the outside. While this device is most efficient when the vehicle is in motion, it is also efficient when standing still, in preventing the pocketing of heated air in the upper part of the motor compartment. It exhausts the heated air which pockets



Showing how air currents produce the desired effects in the Garland Exhaust Ventilator.

above the engine and which is not removed by fan or fly wheel action. This superheated air, as is well known, prevents cylinder walls from cooling and the radiator from giving full efficiency.

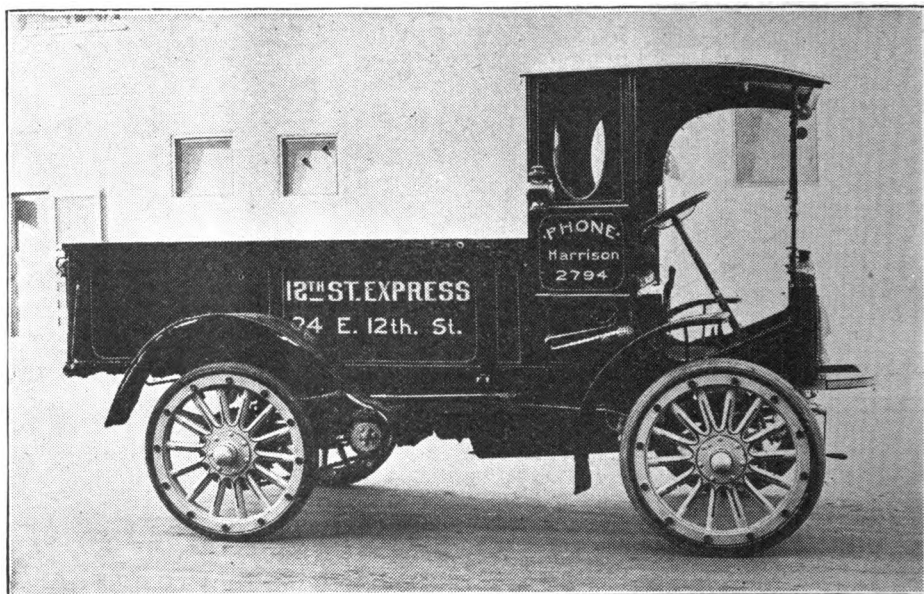
Garland Exhaust Ventilators are simple in construction; no parts to get out of order, are absolutely storm proof, and can be applied to any type of motor car at a nominal cost. They were selected for the Little Giant after thorough tests had satisfied the Tool Company that the efficiency of the engine was increased by their use.

The Garland Exhaust Ventilator is manufactured and sold by the Ross-Wortham Company, 1818 McCormick Building, Chicago.

"Will you have anything on your face, sir, when I am through?" asked the barber.

"You might leave my nose there," answered the man in the chair.

Except for the headache a man has the morning after he probably wouldn't remember the good time he had the night before.



No service is quite as severe on a motor truck as express service. This Model H "Little Giant" is making good.

### A Testimonial With a Punch.

Referring to your favor of recent date making inquiry as to whether the two "Little Giant" trucks were still in our service and whether there is anything you can do for us.

We are mighty glad to have an opportunity to say a few good words in connection with your product and hope it will be of benefit to your patrons and prospective buyers.

As you are aware, we purchased the two trucks over a year ago and they have been given the "acid test," and we really believe no other two trucks of their capacity could be more dependable, and we keep them going at a merry clip every day.

We also want to say that we very much appreciate the courtesies extended by your Cleveland people, particularly Mr. H. B. Young, Manager, and his very able assistant, Mr. Fred Sweet, with whom we placed our order for the trucks.

Permit us to call your attention to the cut of the "Little Giant" in the upper right hand corner of our letterhead.

With the hope of adding more "Giants" to our force in due time, and extending our best wishes, we beg to remain,

Yours very truly,

THE ADVANCE CARTAGE CO.,

(Signed) E. J. SMITH,  
P. & G. M.

### AUTO OUSTS LAST HORSE.

Mandel Brothers Part With Pardy,  
Who Goes to Equine Elysium.

All That Remains as Memento Is  
Gilded Shoe Nailed to Wall.

It was like a mercantile edition of "Black Beauty"—the parting scene between the veteran barn boss and old Pardy, last of the 297 faithful horses which formerly drew wagons for one of Chicago's department stores, says the Chicago Daily News.

Pardy went away today to that equine paradise, a farmer's pasture land. And Superintendent L. L. Timmons, a horse lover and Kentucky bred, finds himself in charge of eighty delivery motor cars. They never whinny for sugar or show affection, but do the work of 450 horses and deliver an average of 12,000 packages a day over a radius of more than thirty miles from the loop. All that remains to remind him of the good old—



The above view shows another Little Giant truck in the express service, owned by the Lakewood Auto Express Co. This was sold them by Mr. H. B. Young of the Cleveland Office of the Chicago Pneumatic Tool Co. This truck has a peculiar type of body known as the "wheel-house" type—that is the fender fits up inside the body proper thus giving an exceptionally large body space, five feet wide inside and yet is down very low on the frame.

not so efficient—old days, is a gilded horseshoe nailed to his office wall.

#### **Sell Last Delivery Horse.**

Announcement that Mandel Bros. had sold their last delivery horse was hailed by automobile men and delivery experts as the marking of an important chapter in transportation progress. Other department stores are displaying similar activity in ousting horses and adopting most up-to-date methods of package distribution.

"The complete motor service means that we are able to extend our radius of direct delivery service from the loop by many miles," said General Manager D. F. Kelly.

"We are now sending packages right over the roads to customers in Waukegan and cover equal distances to other points. When our horse delivery service was at its crest we used 297 animals, but were forced to relay much of our goods by train express to the suburbs, where wagons from branch stables completed the deliveries. Now practi-

cally everything within more than thirty miles of the store can be sent direct from the loop.

#### **Sentiment Once an Element.**

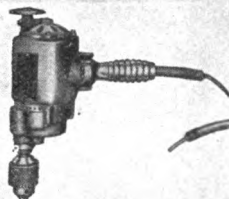
"Of course, there was an element of sentiment in the day of horses which cannot be duplicated in this era of machinery and gasoline. But motor cars give such service that no argument stands against them. One day just before Christmas, for instance, our cars delivered 24,000 packages."

#### **Horse Must Vanish, View.**

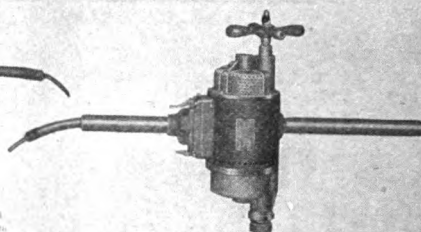
"The complete passing of the horse in retail delivery service is inevitable," observed General Manager E. M. Rosenthal of Rothschild & Co. "We are constantly strengthening our delivery system with motor cars, to the public's satisfaction."

Other heads of stores, large and small, within the loop and in other business centers, reported remarkably rapid progress in the invasion of the motor car in the delivery field.

# Everything in Electric Tools



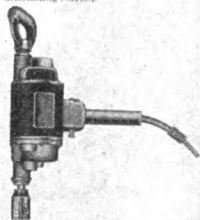
No. 1 A Duntley Electric Drill.  
Capacity  $\frac{1}{2}$  inch. Will operate on direct current or single phase alternating current.



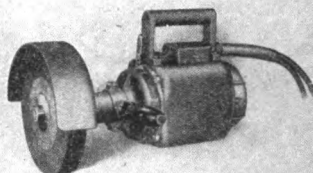
No. 3 SS Duntley Electric Drill.  
Has No. 3 Morse Taper socket, designed for heavy duty. Will operate on direct or alternating current.



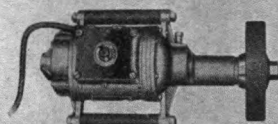
No. 900 Duntley Electric Drill.  
Capacity  $\frac{1}{2}$  inch. Will operate on direct or single phase alternating current.



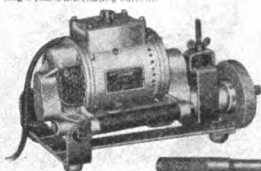
No. 1 SS Duntley Electric Drill.  
Capacity  $\frac{1}{2}$  inch. Will operate on direct or single phase alternating current.



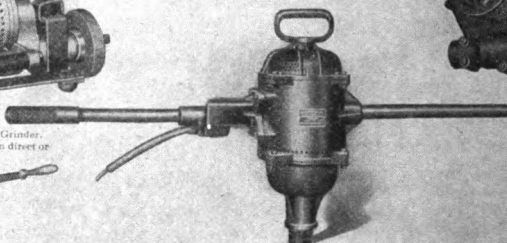
Duntley Electric Grinder.  
Built in two sizes for 5 and 8 inch emery wheel. Will operate on direct or alternating current.



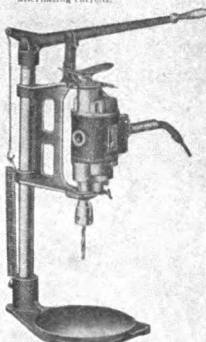
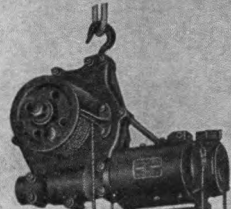
No. 4 Duntley Side Spindle Grinder.  
Built in three sizes for 4, 6 and 8 inch emery wheel. Will operate interchangeably on direct or single phase alternating current.



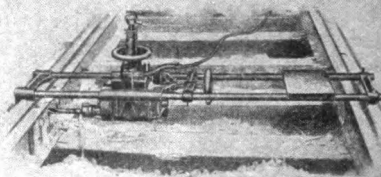
Duntley Portable Surface Grinder.  
Built in three sizes to operate on direct or alternating current.



No. 4 Duntley Center Spindle Electric Drill.  
Will operate on direct current. Has No. 4 Morse Taper Socket.



Sensitive Drilling Stand for Duntley Electric Drills.  
Built in five sizes to take standard Duntley electric drills up to  $\frac{1}{2}$  inch capacity.



Duntley Electric Track Drill.  
Built for rapid work in rail bonding and for drilling and reaming joint holes. Built in three sizes for 600 volts, direct current.

Duntley Portable Electric Hoist.  
Built to capacities up to 1 ton. For 110 and 220 volt direct current only.

ASK FOR BULLETINS

## Chicago Pneumatic Tool Co.

1014 Fisher Bldg., Chicago

Branches  
Everywhere

52 Vanderbilt Ave., New York

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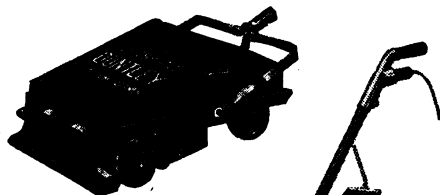
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# The Duntley Way

## IN MODERN HOUSEKEEPING

### Duntley Vacuum Sweeper

Light and convenient as ordinary carpet sweeper.  
Brush and suction combined.



### Duntley Electric Sweeper

The all-around electric sweeper for daily use.

Low clearance—only five inches high.

Twelve-inch adjustable nozzle with self-adjusting brush.



### Duntley Twin Pump Electric Cleaner

The most powerful and efficient vacuum cleaner made.

Weights only 35 pounds; only 21 inches high; easily carried; noiseless; vibrationless.



All Duntley Cleaners are Licensed under Kenney Patent

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## Duntley Products Sales Co.

810 Fisher Bldg., Chicago, Ill.

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## AFTER INVENTORY

We find ourselves overstocked on various items of raw material as listed below and solicit inquiries for prices which we are sure will be attractive.

### VALVES.

- |          |  |          |                     |
|----------|--|----------|---------------------|
| 10 1"    | Brass Angle Valves.                                      | 200 1/4" | Brass Angle Valves. |
| 77 3/4"  | Brass Angle Valves.                                      | 50 2"    | Brass Angle Valves. |
| 5 7"     | Iron Body Crane Angle Valves, (Flanged Type.)            |          |                     |
| 2 7"     | Iron Body E. C. & B. Angle Valves, (Flanged Type.)       |          |                     |
| 16 3"    | Screwed Type Kelley and Jones Globe Valves, (Iron Body.) |          |                     |
| 2 2"     | Flanged Crane Globe Valves, (Iron Body.)                 |          |                     |
| 2 2"     | Flanged W. T. Co. Globe Valves, (Iron Body.)             |          |                     |
| 1 3"     | Flanged Powell Globe Valves, (Iron Body.)                |          |                     |
| 1 3"     | Flanged Crane Globe Valves, (Iron Body.)                 |          |                     |
| 10 3"    | Flanged W. T. Co. Globe Valves, (Iron Body.)             |          |                     |
| 1 3 1/2" | Flanged W. T. Co. Globe Valves, (Iron Body.)             |          |                     |
| 5 4"     | Flanged W. T. Co. Globe Valves, (Iron Body.)             |          |                     |
| 6 7"     | Flanged Jenkins Globe Valves, (Iron Body.)               |          |                     |

### STEEL.

- |         |                     |   |
|---------|---------------------|---|
| 15 Bars | 280 ft., 1 3/4"     | Hex. Cold Rolled Steel, (Columbia Steel.) |
| 65 Bars | 780 ft., 1 3/8"     | Hex. Mach. Steel, (J. & L. S. Co.).       |
| 6 Bars  | 96 ft., 1 5/8"      | Hex. Mach. Steel, (J. & L. S. Co.).       |
| 18 Bars | 264 ft., 1 1/2"     | Sq. Mach. Steel, (J. & L. S. Co.).        |
| 3 Bars  | 50 ft., 3" x 5"     | flat Mach. Steel, (J. & L. S. Co.).       |
| 3 Bars  | 33 ft., 3" x 5 1/4" | flat Mach. Steel, (J. & L. S. Co.).       |
| 7 Bars  | 66 ft., 3" x 4 1/2" | flat Mach. Steel, (J. & L. S. Co.).       |
| 5 Bars  | 38 ft., 2 3/4" x 4" | flat Mach. Steel, (J. & L. S. Co.).       |
| 200     | 1 5/8" x 9"         | Flat Point Set Screws.                    |

### UNLOADERS.

- |      |                  |      |                               |
|------|------------------|------|-------------------------------|
| 1 3" | Angle Unloaders. | 3 3" | Richards I. and P. Unloaders. |
|------|------------------|------|-------------------------------|

### TUBING.

- 100 Pcs. 2 3/8" o.d.; 2 1/16" i.d.; 5/32" wall, (Ohio Seamless), 19" long.
- U. S. STANDARD SEMI-FINISHED HEX NUTS.
- |            |           |            |        |
|------------|-----------|------------|--------|
| 250 2"     | Standard. | 240 2 1/4" | Check. |
| 150 2 1/4" | Standard. | 300 2 1/2" | Check. |
| 200 2"     | Check.    |            |        |

### TODD SPIRAL PACKING.

- |          |        |         |        |
|----------|--------|---------|--------|
| 10 Boxes | 1 3/8" | 4 Boxes | 1 1/2" |
| 4 Boxes  | 1 3/8" | 2 Boxes | 5/8"   |
| 2 Boxes  | 1 3/8" |         |        |

### ELECTRICAL EQUIPMENT.

- 18 Model B Mottsinger Auto Sparkers, (Second Hand, in good condition.)
- 300 Model 02 Wico Igniters.
- 1 Genl. Elec. Type "I", Four Pole, 20 H.P., 900 R.P.M., 3 Ph., 30 Cycle, 440 Volt, Form "K" Squirrel Cage Induction Motor, No. 160445 (New.)

### BELT LACING MACHINE.

- 1 Birdsboro Belt Lacing Machine, (Practically New.)

## CHICAGO PNEUMATIC TOOL COMPANY

1014 Fisher Building  
CHICAGO

BRANCHES EVERYWHERE

52 Vanderbilt Ave.  
NEW YORK

When writing to advertisers please mention Ideal Power.

### Knowledge is Power.

Two tramps, sitting by the roadside at dusk, were indulging in an imaginary game of poker, in which pebbles played the part of lucre. One of them was a downfall college graduate; the other just an ordinary tramp, named Pat.

Said the latter: "I'll just bet you a thousand dollars as an opener."

The college graduate replied: "I'll raise you a million."

"Make it billion," said Pat.

"Raise you a hundred billion."

"Two hundred billion," said Pat.

"Seventeen quadrillion."

Pat scratched his head for a minute. Then—"take the pot, you educated son-of-a-gun."

### Oh, That's Different.

A lady reached a Western Railroad Station destined to a village two miles away. Her train was late; in fact, it was nightfall. Seeing no one but the watchman, with a lantern, she asked of him: "When can I get to Ogensville?" "Not 'till tomorrow morning, madam, as the stage left a few minutes before the arrival of your train." "Well," said she, "where is the hotel?" "No hotel here, madam." "Well," said she, "I must have somewhere to sleep." Whereupon, the watchman replied: "You can sleep with the agent." "Sir, sir, I wish you to understand that I am a lady." "So is the agent," replied the watchman.

### Sharpening Himself.

When the train stopped at the little Southern station the tourist from the North sauntered out and gazed curiously at a lean animal with scraggy bristles, which was rubbing itself against a scrub oak.

"What do you call that?" he asked curiously of a native.

"Razorback hawg, suh."

"What is he doing rubbing himself against that tree?"

"He's stropping hisself, suh, just stropping hisself."

### Who Am I?

I am more powerful than the combined armies of the world.

I have destroyed more men than all the wars of the nations.

I am more deadly than bullets, and I have wrecked more homes than the mightiest of siege guns.

I steal, in the United States alone, over \$300,000,000 each year.

I spare no one, and I find my victims among the rich and poor alike, the young and old, the strong and weak. Widows and orphans know me.

I loom up to such proportions that I cast my shadow over every field of labor, from the turning of the grindstone to the moving of every railroad train.

I massacre thousands of wage-earners in a year.

I lurk in unseen places, and do most of my work silently. You are warned against me, but you heed not.

I am relentness.

I am everywhere—in the home, on the streets, in the factory, at railroad crossings, and on the sea.

I bring sickness, degradation and death, and yet few seek to avoid me.

I destroy, crush or maim; I give nothing, but take all.

I am your worst enemy.

I am CARELESSNESS. — *Courtesy Southern Pacific Company.*

### Silver Rivet Supersedes Time-Honored Cornerstone.

Instead of the customary cornerstone setting, a silver rivet was driven into the steel work of a 26-story building being erected at Madison avenue and Forty-second street, New York City, by August Heckscher. When the building is completed the rivet will be exposed in a silver lined recess in the main entrance lobby.

### How About the Riveting Hammer?

"Why do you knock so? Why are you always using the hammer?"

"I do it to rivet attention, my boy."





A coaled cellar maketh a warm house.

Our mistakes may add to the wisdom of others.

An obese man may lose flesh by trying to shave himself.

Fortunate is he who sees the point of a joke instead of feeling it.

Little aches result from the pains a man takes in enjoying his vacation.

There are a lot of funny things in this world—besides men and women.

Many a man asks questions merely for an excuse to answer them himself.

Usually when a woman disapproves of her daughter's husband the honors are even.

Every man favors honest government as long as it doesn't interfere with his interests.

A woman seldom loves her husband enough to refuse to work him for the benefit of her folks.

A girl may not care to be everything to an eligible young man; she's usually satisfied to become his better half.

A woman's taste in selecting neckties for her husband is as good as a man's taste in selecting millinery for his wife.

Stupid men are never dissatisfied with themselves.

No man who hasn't been tempted is sure of his honesty.

Even a prohibitionist makes no kick about the horn of plenty.

The last step in a questionable undertaking may be a lock-step.

Some people can best make their presence felt by their absence.

A distant manner doesn't lend enchantment to one's view of friendship.

The higher a man gets the more he has to depend on others to hold him up.

It isn't necessary to make a fool of ourselves every time we have the chance.

Before raising the dust with a touring car it is necessary to raise the "dust" for one.

There must be something wrong somewhere when the night latch fails to tumble to a buttonhook.

The wise man turns up his sleeves and goes after a job, while the fool sits around and waits for the job to come to him.

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# IDEAL POWER

Published Monthly in the Interest of Compressed Air and Electrical Appliances and Motor Trucks  
By THE IDEAL POWER PUBLISHING COMPANY  
Fisher Building, Chicago

VOL. XI

MARCH, 1916

No. 12

## Regulating the Capacities of Chicago Pneumatic Compressors

—From POWER

With the adoption of the "Simplate" disc valve the Chicago Pneumatic Tool Company has made a number of improvements in its various types of air compressors. Perhaps the most notable improvement is the capacity regulation on all power-driven compressors. On medium-sized machines the regulation is two-step, but on compressors having a stroke of 14 in. and above, four-step

regulation is used when the service conditions make it desirable. This regulation consists of holding open by air pressure certain air-inlet valves and returning to the atmosphere a portion of the air drawn into the cylinders. In this way a delivery equal to the demand is obtained, insuring high economy at all underload points.

For the two-step control unloading

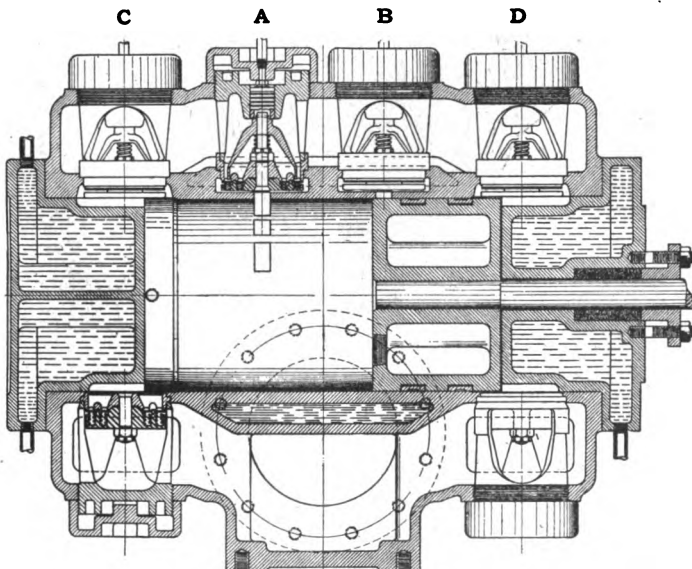
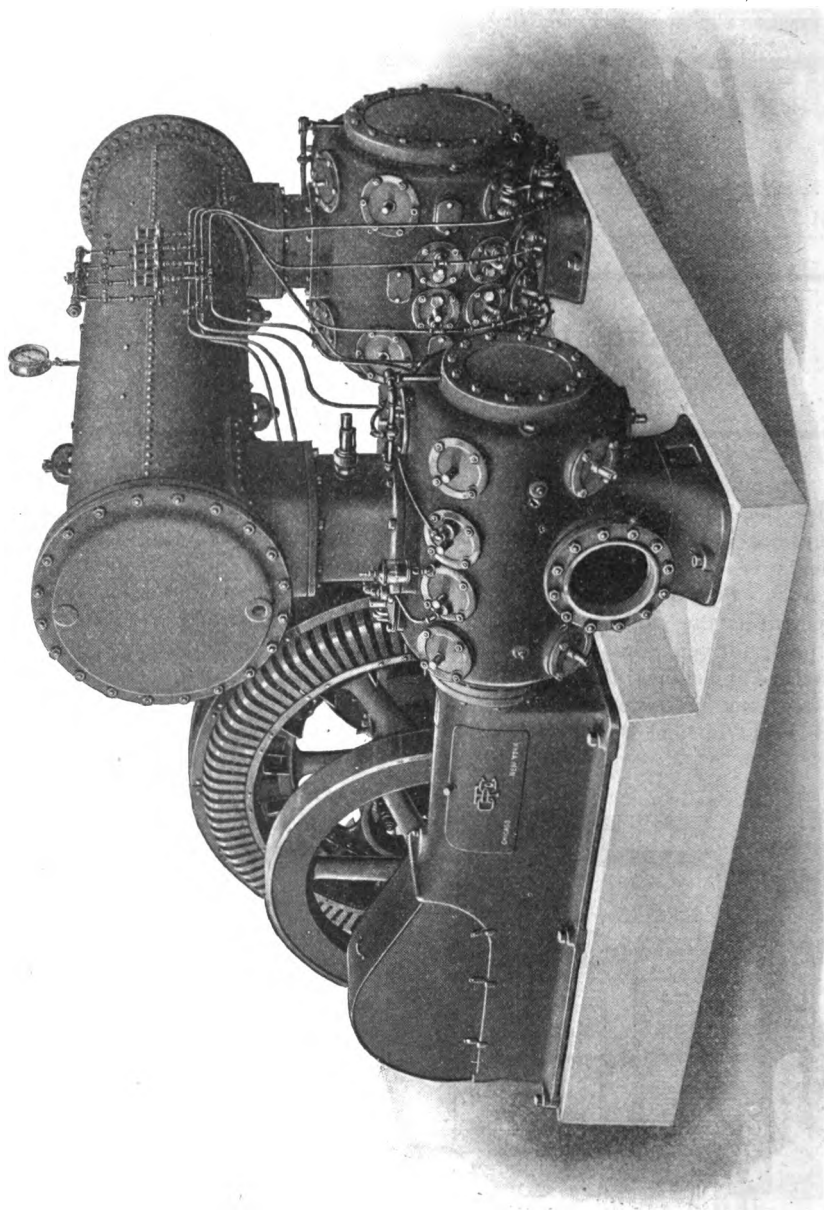


Fig. 1. Inlet Valves arranged for four-step capacity regulation in Chicago Pneumatic Compressors.



Class O-CE Chicago Pneumatic Compressor showing four-step regulation.

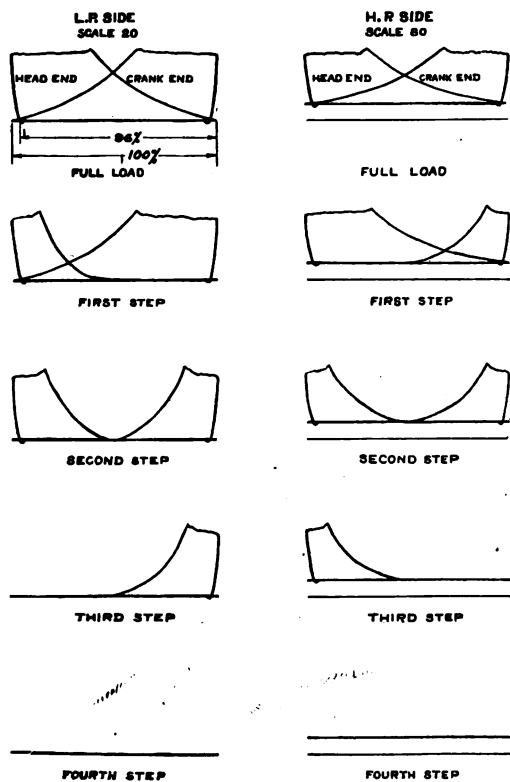


Fig. 2. Indicator diagrams showing the effect of regulation.

inlet valves are provided in connection with differential unloaders. One of the latter is piped to the inlet valve at the head end of the high-pressure cylinder and at the crank end of the low-pressure cylinder. The other unloader is piped to the inlet valve at the crank end of the high-pressure cylinder and the head end of the low-pressure cylinder. The first unloader is adjusted to operate at a pressure of 100 lb., and the second at 104 lb. Operation of the first unloader holds open the inlet valves at opposite ends of the high and low-pressure cylinders, so that air is compressed in only one end of each cylinder, and the compressor operates at one-half load. When the other unloader operates, the rest of the inlet valves are held open and the compressor runs under no load.

The four-step regulation is similar ex-

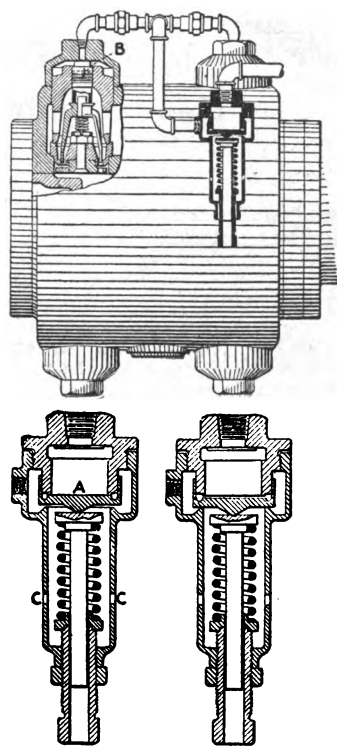


Fig. 3. Sectional view of differential regulator and application of regulator and unloading mechanism.

cept that four unloaders are employed instead of two, and to provide the four steps two intermediate sets of valves in the air cylinder are located midway in the stroke of the piston. As described for the two-step regulation, the unloaders are piped to alternate ends of the cylinders, so that when the crank end of the low-pressure cylinder is unloaded the inlet valves at the head end of the high-pressure cylinder are also held open, giving, as nearly as can be obtained, a balanced condition for each complete revolution and at the same time maintaining the correct cylinder ratio. The unloaders are set to operate at about 2 lb. difference in pressure between the successive steps. For example, the first unloading step will occur at 98 lb. pressure, the second at 100 lb., the third at 102 lb. and the fourth step at 104 lb., when the compressor will be

HENRY GOLDNER

PRESIDENT

ALL AGREEMENTS CONTINGENT UPON STRIKES, ACCIDENTS OR CAUSES BEYOND OUR CONTROL  
QUOTATIONS ARE MADE FOR IMMEDIATE ACCEPTANCECHAS. F. WISE

SECY &amp; TREAS

## Henry Goldner Boiler and Tank Works

**Water and Mifflin Sts.**BELL PHONE, DICKINSON 1199  
KEYSTONE PHONE, MAIN 3190**Philadelphia, Pa. October 9, 1915**Chicago Pneumatic Tool Co.  
1740 Market Street  
Phila. Pa.

Gentlemen:-

We have one of your "Giant" Fuel Oil Air Compressors which we have recently used in the erection of two steel tanks 65'-0" diameter 32'-0" high, which we have found to be satisfactory in every respect, and at the present time we are making alterations to our factory building to place same therein for shop use.

Yours respectfully,

HENRY GOLDNER BOILER &amp; TANK WORKS.

PER



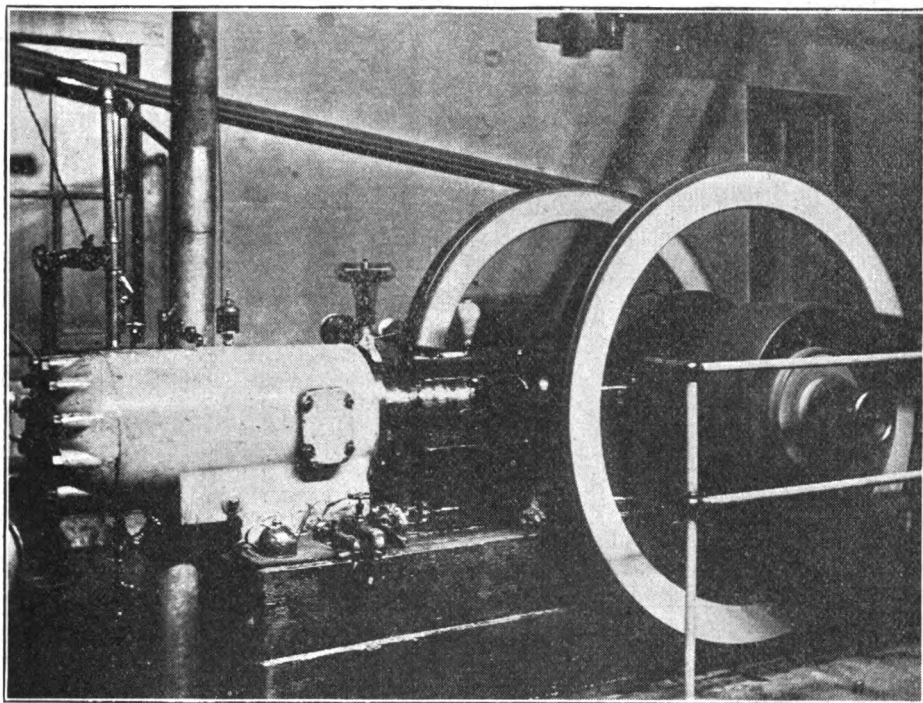
Dist/CW

What a prominent user thinks of Chicago Pneumatic Fuel Oil Compressors.

completely unloaded. In the individual unloader the range between the point of loading and unloading is about 8 lb., so that the pressure is dropped to 96 lb. before the first step will go into action again, and the next three steps will operate at 2-lb. intervals.

Fig. 1 is a sectional view of an air cylinder showing the arrangement of the inlet valves for four-step capacity regulation. This view indicates the employment of four distinct sets of inlet valves, distributed along the length of the cylinder, each set being under the control of a differential regulator that may be adjusted to operate at any desired pressure. For three-quarter load, inlet valves "A" are held wide open and the air is returned to the atmosphere until the piston passes the ports to these valves. For one-half load valves "A" and "B" are held open, and for one-quarter load valves "A," "B" and "C" are held open. For no-load all inlet valves are open. The indicator diagrams reproduced in Fig. 2 show the effects of the different steps of the regulation.

Fig. 3 shows a sectional view of the differential regulator and the application of the regulator and unloading mechanism. The unloader is provided with a valve that has areas that are different for the loaded and unloaded positions. As shown at "A" in Fig. 3, the valve is cup-shaped and is guided by a cap screwed into the top of the body of the regulator. On the bottom of this cap is a narrow seat against which the valve is held by the pressure of a spring. In its loaded position, or in other words, when the valve is pressed up against its seat on the bottom of the cap, the area against which pressure is applied is less than when the valve is in the unloaded position, or down against the seat on the opposite side. When the air pressure in the receiver increases to the point for which the regulator is set, the pressure forces the valve down against the pressure of the spring. Consequently the pressure builds up on top of piston "B," forcing it downward, and in turn the forked member which holds the valve open.



Giant A-O Fuel Oil Engine installed by the village of Echo, Minn.

When the pressure in the receiver reduces to the prescribed limit, the spring forces the valve back against its upper seat, and the pressure on top of the piston of the unloading mechanism is released through holes "C" in the casing of the regulator. A spring raises the forked member off the valve and allows it to resume its normal functions.

#### "Giant" Fuel Oil Engines.

"GIANT" engines, made by the Chicago Pneumatic Tool Co., are guaranteed to run on any mineral oil of 28° Beaume scale or lighter, containing not over one per cent sulphur. There are a number of oils well below 28° Beaume scale on which they will operate satisfactorily, but this depends upon the characteristics of the particular oil, such as its asphaltum content, freedom from sand, etc., so that a general guarantee cannot be given, though recommenda-

tions for heavy oils can and will be made.

Most of the common crude oils, fuel oils, and residuums are naturally included in the above guarantee. A few of the well-known oils particularly suited to the operation of the compressors are as follows: Star Oil, Diesol, Calol, Stove Oil, Solar Oil, Gas Oil, Kerosene, and all of the distillates between Kerosene and Lubricating Oil.

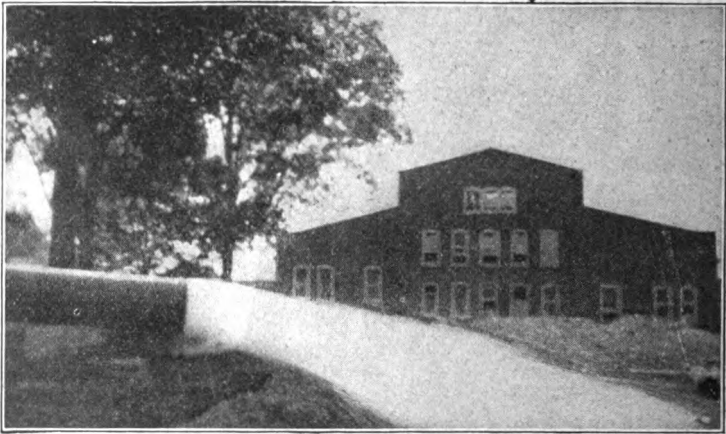
A number of the above fuels are obtainable for three cents per gallon. To the power user this means opportunity. Records of many Giant engines are available, showing, to take a typical example, the fifty horsepower size, fuel costs per hour of from 12 to 15 cents.

The engine is of the horizontal, straight line, single cylinder type with crosshead. It is mounted on a substantial sub-base so designed that when the machine is in operation it is free from vibrations. Parts are relatively few in



*"Boyer"**Chicago*

# The Artesian Way



Baker Air Injector System at work at Van Camp Packing Company's plant, Adrian, Mich.

---

No pulling of wells.      No trouble from sand or gravel.  
 Purity of water assured.  
 And a Guarantee as long as the life of the pipes in the well.

---

That's the

## Baker Air Injector System

OPERATED BY

### Chicago Pneumatic Compressors

If you are not getting the amount of water you need, or if you are not getting the amount you expected to get in the old air lift way, or from your sucker rod and plunger pumps, communicate with us. We have an interesting proposition for you.

ADDRESS: WATER LIFT DEPARTMENT

## Chicago Pneumatic Tool Co.

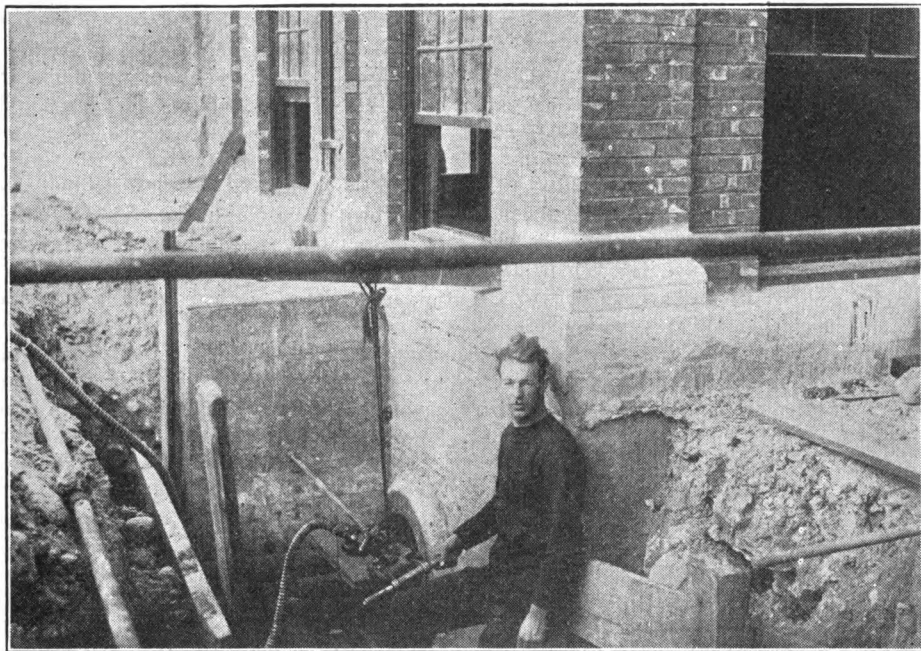
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BRANCHES  
 EVERYWHERE

52 Vanderbilt Ave.  
 NEW YORK

*"Duntley"**"Little Giant"*

When writing to advertisers please mention Ideal Power.



B. Franklin Hart, Jr., and his Hummer Drill.

number and the engine is well suited to rough, heavy duty under conditions that preclude the employment of a highly trained attendant. In operation it requires little attention. Economy and durability are its characteristics. The general design is strong, compact and graceful, and the symmetry of every feature indicates the care used in its development.

#### Two of a Kind.

A young matron, giving a dinner party, was nervous lest the new cook might not prove equal to the occasion. Going down to the kitchen at the eleventh hour, she exclaimed: "Why, Ellen! If we haven't forgotten all about the entrees!"

"Sure enough we have, mum!" replied Ellen, poising in mid-air a large platter she was wiping. "Ain't we the couple of blunder-headed mutts!"

Being happy is often a matter of not having anything to make you otherwise.

#### The Hummer Makes a Hit.

B. Franklin Hart, Jr. & Co., 50 Church St., New York, N. Y., write as follows regarding the results achieved with one of their A-66 "Hummer" drills:

"On November 1st, we completed drilling four holes in concrete walls in a most satisfactory manner with your Hummer Rock Drill. Holes measured 12" x 20' and were through hard concrete walls, 3 ft. 8 in. thick. The work was done by men who were without previous experience. We rigged up a sort of trolley on a piece of pipe and carried the weight of the tool on a light line from same. The photograph herewith shows the method. The work was done at the Pumping Station of the East Orange Water Works near Short Hills, N. J. We are in every way delighted with the tool and recommend it enthusiastically."

Crooks—"Lightfoot was run over by an automobile today."

Brooks—"Oh, was he? What make?"

### Care of Pneumatic Tools.\*

By August Meitz.†

In handling pneumatic tools several points are to be taken into consideration. First of all, it is a good policy to adopt a standard of such tools on any one railroad system. This plan would reduce the cost of repairs and maintenance about 50 per cent. as well as reduce the expense for repair parts to be carried in stock in order to expedite repairs and to prevent holding tools out.

In selecting pneumatic tools for service a great many mistakes are made by the workmen as regards to speed and power. For instance, an air motor of high speed will be used by a boiler maker to drill out stay-bolts; and as soon as he has completed this drilling, he will use the same motor for running in a stay-bolt tap, say 11-16 in., thereby using the same speed as he had just used on a 13-16-in. high-speed drill. In such cases damage is done to the motor as well as to the tap—the motor is overloaded and the tap is overspeeded, with the result that the motor will break in some place and the tap is spoiled. The same result is had by drilling and reaming at too high speed on the motor—the reamer is spoiled. Taking the standard rule, "What is gained in speed is lost in power," we come to the conclusion that it is unwise to have all high-speed motors in any one shop, as the little time gained by drilling is a double loss on spoiled drills and taps which, if handled in a more reasonable manner, would pay for the lost time.

All motors should be kept clean and well oiled at all times. Good engine oil should be used, and it will also be found to pay to use some light grease to fill the case or crank chambers.

Air hammers should always be well oiled before using. A light mineral oil, we have found, gives best results. Any oil which will gum or thicken in cold

weather should be avoided. After a hammer has been in service and returns to the toolroom, it should be placed in a solution of gasoline and signal oil, equal parts, as small particles of rubber from the hose lining frequently lodge in the chamber between the handle and the throttle-valve sleeve. The gasoline mixture will cut this rubber, and by blowing out the hammer with compressed air, all refuse and foreign substances are removed. After the hammer has lain in the oil about five minutes, it should be taken out and hung up to drip. Before the hammer is used again, all parts should be properly oiled.

Others find that if air hammers are kept in a coal-oil bath when not in use, there is very little repair work to be done on these tools until some part becomes worn so that it must be replaced by a new one.

The throttle handle of the motor is filled with coal or signal oil every evening, which prevents throttle valves from sticking, and also keeps the valves of the machine clean; both give more or less trouble when neglected.

### It's An Ill Wind—

A genuine Kansas windstorm paid New Orleans a fleeting visit last month and made things uncommonly lively for a few minutes. The unwelcome visitor damaged a great deal of property, which included many toppled smoke stacks of all sizes. A great many of the orders for re-erection of these stacks were placed with the Alex Dussel Co. and as a result this firm was nearly buried with work. By strenuous efforts, however, they promptly fulfilled all demands upon them and deserve much credit for their efficient service in this emergency. Boyer riveting and chipping hammers were used on all the Dussel jobs—of course.

The accompanying photo is a view of a stack 60" diameter by 125 feet high, which was built for the French Market Ice Company, New Orleans, by the Alex. Dussel Co. to replace a stack which

\*From American Railway Tool Foremen's Association Proceedings. †Tool foreman, Missouri, Kansas & Texas Ry., Parsons, Kan.



Top of a big smoke stack built with Chicago Pneumatic tools by Alex Dussel Co.,  
New Orleans.

was blown down in the storm referred  
to.

The gentleman appearing in the pic-  
ture is Mr. Alex. Dussel.

# THE OHIO STEEL FOUNDRY COMPANY

**LIMA, OHIO**

Jan. 31, 1916.

Mr. W. O. Duntley, President,

File 26

Chicago Pneumatic Tool Co.,

Chicago, Ill.

Dear Mr. Duntley:-

At 2:00 o'clock Thursday morning, Jan. 20th, we had a fire in our tool room that destroyed all our pneumatic chipping hammers which, of course, put our chipping department out of business.

At 9:00 o'clock the same day, we talked to your Detroit office over the telephone and at 4:30 your District Manager, Mr. T. B. Slingman was in Lima with 500'0" of hose and twenty-five chipping hammers which he brought with him as baggage. On Friday morning, he had twenty-five additional hammers here.

You can feel certain that we appreciate such treatment and I want to congratulate you on the up to the minute business methods of your organization. This instance shows that they are on the job and don't have to wait for orders from headquarters.

With kindest regards, believe me,

Very truly yours,

*Harry Wright*  
President.

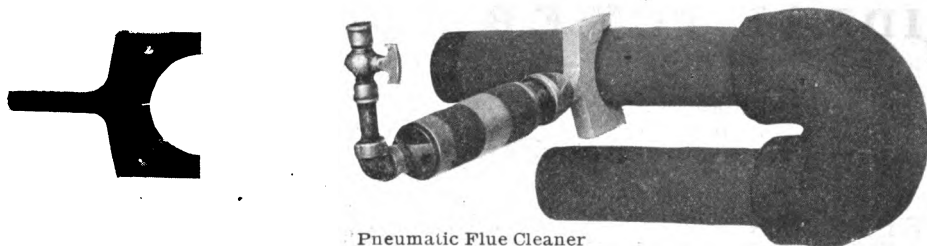
HW W

When they throw bouquets at us like this we simply cannot dodge them. This letter seemed out of the ordinary, and we publish it with a great deal of pleasure. Our chipping hammer department was fortunately in position to deliver the goods promptly, and with Teddy Slingman on the job, Mr. Wright's wants were filled in record-breaking time and evidently to his entire satisfaction.

**CHICAGO PNEUMATIC TOOL CO.**

1014 Fisher Bldg., CHICAGO

52 Vanderbilt Ave., NEW YORK



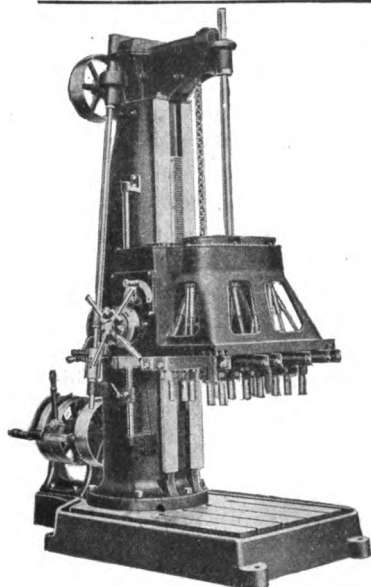
Pneumatic Flue Cleaner

**Another Field For Pneumatic Hammers.**

The illustration presented herewith shows the cutter and pneumatic hammer of a new device recently introduced for cleaning condenser pipe. Everyone knows the difficulty experienced through scale forming on the pipe of atmospheric ammonia or steam condensers, and the labor required to remove same. As a rule, this is done by hand and is a tedious job. With the new device shown, which is known as the Rapid Pipe Cleaner, one man can accomplish more than three men cleaning by hand and do better and more uniform work. The device consists of a cutter holder, with pivoted cutters operated by a pneuma-

tic hammer striking light blows in rapid succession quickly dislodging the scale with a minimum of labor and cost. The cutter as is apparent from the illustration cleans one-half the circumference of the pipe at each pass. Air pressure required 50 to 60 lbs., but this is usually at hand in ice making or refrigerating plants. The cleaning should be done when the scale is dry. The cleaner is not limited to the removal of scale, caked paint, and rust from pipe, but should be equally effective in cleaning rust, etc., from round truss rods on bridges. The machine is manufactured and supplied by H. A. Bergmann, 4232 Holly Ave., St. Louis.

## Can You Use a Western Multiple Spindle Drill Press



of the following specifications?

Eight spindles with No. 4 Morse Taper and will drill 23-inch circle.

The height of the machine is 11 feet, and the approximate floor space 4 feet 10 inches by 9 feet 8 inches.

It has both tight and loose pulleys, 5½x16 inches.

Has been but little used and is in first class condition.

Now on hand at Franklin, Pa.

For further information please address

**Chicago Pneumatic Tool Co.**

1014 Fisher Bldg.  
CHICAGO

Branches  
Everywhere

52 Vanderbilt Ave.  
NEW YORK

# IDEAL POWER

PUBLISHED MONTHLY

In the Interest of Compressed Air  
and Electrical Appliances

BY THE

**IDEAL POWER PUBLISHING CO.**  
1014 FISHER BUILDING  
CHICAGO, U. S. A.

C. I. HENRIKSON

Editor

Vol. XI MARCH, 1916

No. 12

## TERMS OF SUBSCRIPTION

United States, Canada and Mexico, 25 cents per year  
Other Countries in Postal Union, 50 cents per year

## ADVERTISING RATES ON APPLICATION

Send 25 cents and have your name put on our  
subscription list

### Tool Company Elects Officers for Ensuing Year.

The annual election of officers was held in Jersey City on Feb. 23rd, with the following result:

President, W. O. Duntley; vice president, J. G. Osgood; secretary, W. B. Seelig; treasurer, Le Roy Beardsley; auditor, R. S. Baker; assistant secretary, Thomas Aldcorn; assistant treasurer, F. C. Bassett.

### "Little Giant" Truck Chief Heads Chicago Automobile Club.

In casting about for capable men to direct the destinies of the Chicago Automobile Club, Mr. W. O. Duntley, president of the Chicago Pneumatic Tool Co., was recently elected president of the club, and Mr. W. B. Seelig, who is secretary of the Tool Company, was elected secretary.

The other officers elected were: Vice president, A. N. Eastman; second vice president, John T. Connery; treasurer, George F. Ballou. Mr. Duntley's popularity is attested by the unanimous vote by which he was elected.

### New Cincinnati Office For Little Giant Truck.

A show room and service station for Little Giant trucks has been established by the Chicago Pneumatic Tool Company at 806 Sycamore St., Cincinnati,

Ohio, which will be devoted exclusively to the sale and maintenance of Little Giant trucks in Cincinnati and surrounding territory. This branch will be under the management of Mr. W. C. Walker, who is well and favorably known in Cincinnati, and new and old customers may be assured of prompt and courteous attention to their wants.

### Situations Wanted.

Married man, 25 years old, has had considerable experience in Hydro plant work, arc lamps, etc. Graduate of I. C. Schools in electric lighting course, wants position in Central Station or Substation work as operator. Can furnish first-class references. At present employed. Address Ad. 15, Ideal Power.

A position as foreman in structural iron shop. Have had 15 years' experience in shop management. Can handle men and produce results. Is 35 years of age and married. Address Ad. 16, Ideal Power.

Machinist and engineer. Recently employed on third tracking of elevated lines. Now in New York City. Address Ad. 17, Ideal Power.

General boiler foreman with railway and general boiler work experience. Address Ad. 18, Ideal Power.

### Gigantic Locomotive.

The largest engine in the exhibit of the Baldwin Locomotive Works at the San Francisco Exposition, which was awarded the grand prize, was the Burlington's engine, No. 6110. This is the largest road engine of the nonarticulated type ever built. It weighs nearly 300 tons, is almost 84 feet long and carries seventeen tons of coal and 10,000 gallons of water. Its fire box is as large as a homestead shack and the inside diameter of the front end of the boiler is 7 feet 4 inches.

**PETER F. FLAVIN****Death of Peter F. Flavin.**

Mr. Peter F. Flavin, a district manager for the Chicago Pneumatic Tool Co., died suddenly at Corpus Christi, Texas, on the afternoon of New Year's Day, following a stroke of apoplexy. Although he had not been for some time past in his usual robust health because of injuries sustained in a street car accident at New Orleans some eighteen months previous, Mr. Flavin was apparently almost entirely recovered of his injuries and had resumed active charge of his business, and his premature demise was a distinct, severe shock to relatives, friends and business associates throughout the country which he had long traveled extensively and all over which he was well and favorably known.

Peter F. Flavin was born in Janesville, Wis., June 17, 1866, moved with his parents in early childhood to Bloomington, Ill., where he was educated in the public schools and served an apprenticeship in the Chicago & Alton railway shops; resigned in 1889 to take a position with the Mexican National railway at Corpus Christi, Texas, and was steadily advanced in the mechanical department, being later promoted to the position of master mechanic of the road, with headquarters at Laredo, Texas. After residence at Laredo for eight years in that capacity, he resigned to accept a posi-

tion as traveling salesman for the Standard Railway Equipment Company of St. Louis, and for the four years preceding his death had been district manager for the Chicago Pneumatic Tool Company, maintaining headquarters at New Orleans, La., and Houston, Texas.

Mr. Flavin was married in January, 1897, to Miss Mollie Lawler, a prominent young lady of Laredo, Texas, whose family later moved to Corpus Christi, their former old home, and it was while spending the holidays here that this last illness came upon him, it being his destiny to pass away among the relatives and friends of his first Southern home.

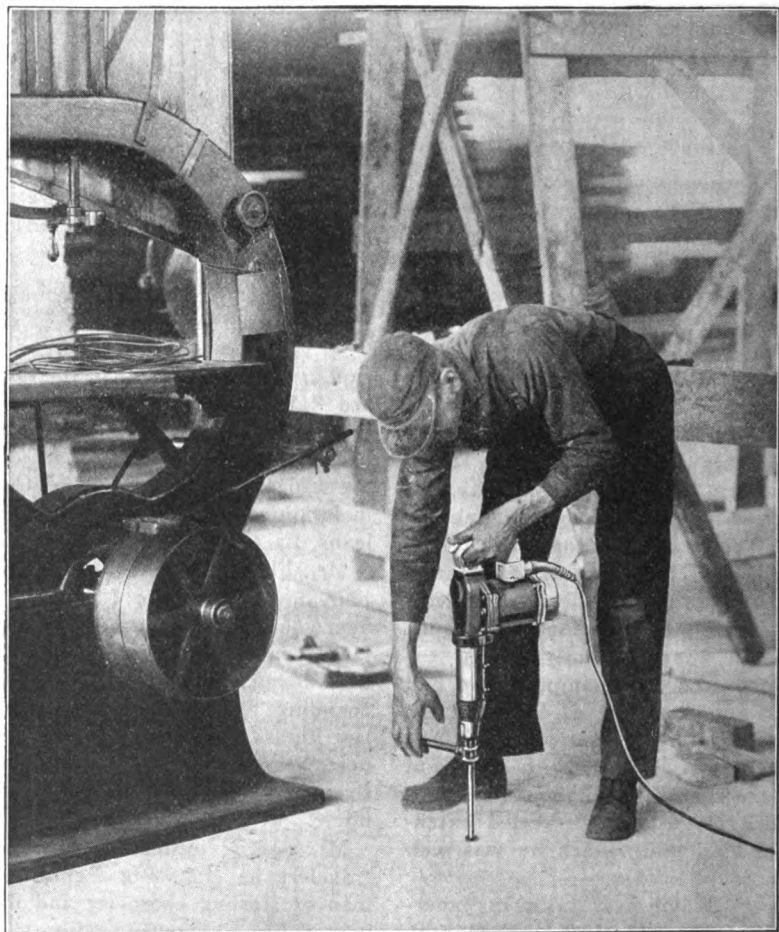
Mr. Flavin, intimately known among travelers as the "Big Fellow," was a man of sterling character and magnetic personality, endowed with a happy, whole-souled, generous nature, eminently competent and ruggedly honest, whose intelligent ambition and practical efforts raised him to a position of leadership in salesmanship and established for him a character of foremost rank in the respectful esteem and affectionate regard of friends and associates throughout the broad field of his life's activities. He will long be held in affectionate remembrance throughout representative soliciting branches in the railway and industrial supply world.



*"Boyer"**Chicago*

# Duntley Universal Electric Hammer Drill

Patented February 18, 1913. Others Pending



Duntley Electric Hammer Drill Drilling Anchor Bolt Holes for Securing Band Saw to Concrete Floor

## GENERAL DATA, Size No. 0

Wound for 110 or 220 volts (Universal type to operate on either D. C. or single phase A. C.)

Maximum capacity, in stone or concrete . . . 1 inch

Weight 21 lbs. net. Over-all length 17½ inches

EQUIPMENT—10 feet electrical conductor, with Edison plug and fuse; 2 drill steels (specify type, diameter and length when ordering); 1 rotating wrench.

Note—If the tool is intended for chipping, two flat chisels will be furnished instead of drill steels and rotating wrench.

Code Words: 110 volts "Monavirly"; 220 volts "Monaviror."

## CHICAGO PNEUMATIC TOOL CO.

1014 Fisher Bldg., CHICAGO

Branches Everywhere

52 Vanderbilt Ave., NEW YORK

When writing to advertisers please mention Ideal Power.

*Duntley**"Little Giant"*

**Saint Patrick's Birthday.**

'Twas the eighth day of March, some  
people say,  
That Saint Patrick at Midnight first  
saw the day,  
While others declare the ninth he was  
born  
And 'twas all a mistake between mid-  
night and morn,  
For mistakes will occur in a hurry and  
shock  
And some blamed the baby and some  
blamed the Clock.  
With all their cross questions, sure, no  
one could know  
Whether the Clock was 'too fast or  
the child was too slow.  
Well, the first faction fight in Old Ire-  
land, they say,  
Was all on account of Saint Pat-  
rick's Birthday.  
Some fought for the eighth, for the ninth  
more would die,  
And who wouldn't see right, sure,  
they'd blacken his eye.  
At last both the factions so positive  
grew  
That each kept a birthday, so Pat  
then had two,  
Till Father Malcahey showed them  
their sins  
And says, "Nobody can have two  
birthdays but twins,  
Boys, don't be fighting for eight or for  
nine,  
Don't be always dividing but some-  
times combine.  
Combine eight and nine and seventeen  
is the mark.  
Let that be his birthday," "Amen!"  
says the Clerk.  
If he wasn't a twin, sure, our history  
will show  
That he was worth any two saints in  
the Calendar we know.  
Then they all drank his health to cele-  
brate their bliss,  
And it's a practice they kept up from  
that day to this.

---

The true secret of feminine beauty is  
to be born pretty.

**Santa Patricio's Day.\***

Santa Patricio, granda man,  
Live-a far over sea,  
Take-a da cake-a, kill-a da snake-a,  
Make-a da Irish free;  
So on da Santa Patricio Day  
Irelanda man feel fresh,  
Make-a da frisk, drink-a da whisk,  
Have-a da fine procesh.

Santa Patricio, granda man,  
Fix-a da Irish quick;  
Catch-a da job, rule-a da mob,  
Run-a da politick.  
Make-a da ver' big Irishman  
Boss-a da Tammany Hall—  
Poor Dago man sell-a banan',  
Make-a no mon' at all!

Santa Patricio, granda saint,  
Make-a da Irish smart,  
Catch-a da "cush," in wid da "push"—  
Dago push-a da cart.  
W'y don' da Dago have-a one saint  
Help 'im along like-a dat?  
Own-a New York, don' have to work,  
Hold-a da office fat!

Santa Patricio, granda man,  
Make-a me feel like a fool-a—  
Dam-a da shame—change-a ma name—  
Call-a me Pat O'Toola.  
Den on da Santa Patricio Day  
I wear da shamrock new,  
Folks say, "Dere go Antonio—  
He is one Irish, too!"

---

\*Contributed by C. F. Bulotti for the  
March number of Ideal Power.

Mr. Bulotti is Secretary of the Eccles  
& Smith Co., agents for the Chicago  
Pneumatic Tool Co. in San Francisco.  
We have it on good authority that one  
must hear Mr. Bulotti recite this poem  
to get the full measure of emotion that  
is contained in its lines.

---

Bridegroom: "What is the matter,  
driver?"

Coachman: "The horse has just  
thrown a shoe, sir."

Bridegroom: "Great Scott! Do even  
the horses know we are just married?"



The Little Giant as it appeared at the Thomas County (Georgia) Fair, entered by M. H. Goodwin of the Thomasville Ice & Manufacturing Co., who represents the Little Giant in that section of the country. There is a streak of enterprise in some people that distinguishes them from the common herd. If not in the lead they are always well up in the front of the procession and are will-

ing to be seen and heard. One of the enterprising agents for the Little Giant truck is Mr. M. H. Goodwin of the Thomasville Ice & Mfg. Co., Thomasville, Ga. He had several Little Giants togged out in their Sunday clothes during the Thomas County Fair last November and has sent us several photos, only one of which space permits us to publish.

### The Rake.

A small, hen-pecked, worried-looking man was about to take an examination for life insurance.

"You don't dissipate, do you?" asked the physician, as he made ready for tests. "Not a fast liver, or anything of that sort?"

The little man hesitated a moment, looked a bit frightened, then replied in a small, piping voice: "I sometimes chew a little gum."

Any man who itches for fame will have to do a lot of scratching before he gets there.

### Explanation.

"Do you mean to say such a physical wreck as he gave you that black eye?" asked the magistrate.

"Sure, your honor, he wasn't a physical wreck till after he gave me the black eye," replied the complaining wife.

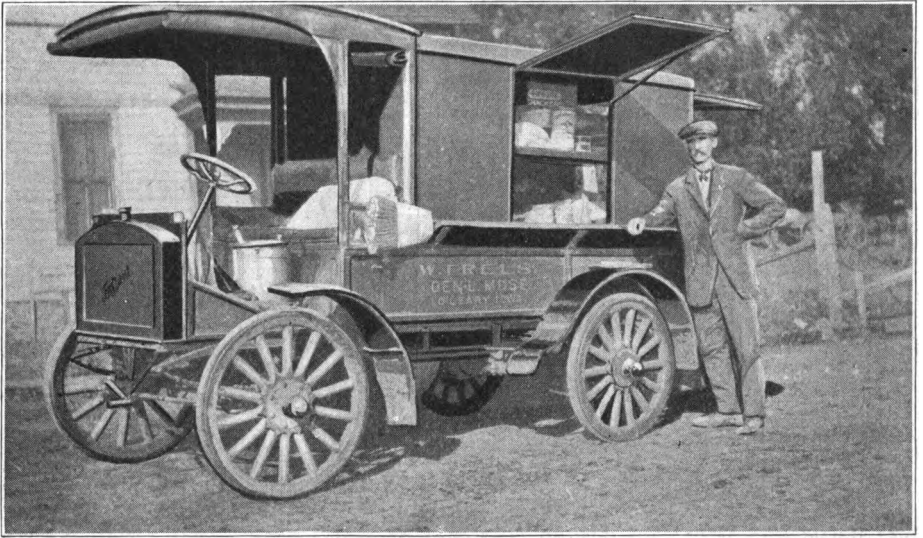
### Light and Airy.

Omar—What kind of business is Johnson engaged in?

Heiny—Pneumatic, I think.

Omar—Pneumatic! Why, I never heard of a business like that.

Heiny—Well, whatever it is, he's running it on wind.



Little Giant department store owned by W. Frels, O'Leary, Iowa.

### A Department Store on Wheels.

Bringing the store to the customer "back on the farm" instead of requiring him or her to travel long distances to the store, is a new development of the Twentieth Century Merchandising Service, as practised by Mr. W. Frels, O'Leary, Iowa.

Three years ago Mr. Frels purchased a Little Giant Truck, manufactured by the Chicago Pneumatic Tool Company. This was fitted with a special body, which enables him to drive into his customer's yard, back the truck up to the door, and by lowering the sides of the truck, expose a miniature department store to his customer's gaze.

It is said that the truck is stocked with everything from a needle to a suit of clothes. Although a great deal of merchandise passes from this portable store every day, it is never empty, for as fast as merchandise is disposed of, farm products are obtained by purchase or exchange and loaded into the truck for the city trade.

The Little Giant Truck has been a faithful partner of this ingenious merchant and although its work has been altogether on the country roads, it has

never failed him. To quote Mr. Frels:

"I have sold my horses, as it does not pay me to keep them, and do not think I will ever go back to horses again."

### Parental Inconsistency.

"Papa," said five-year-old Tommy, "please give me five cents to buy a toy monkey."

"You don't need a toy monkey," answered his father, "you are a monkey yourself."

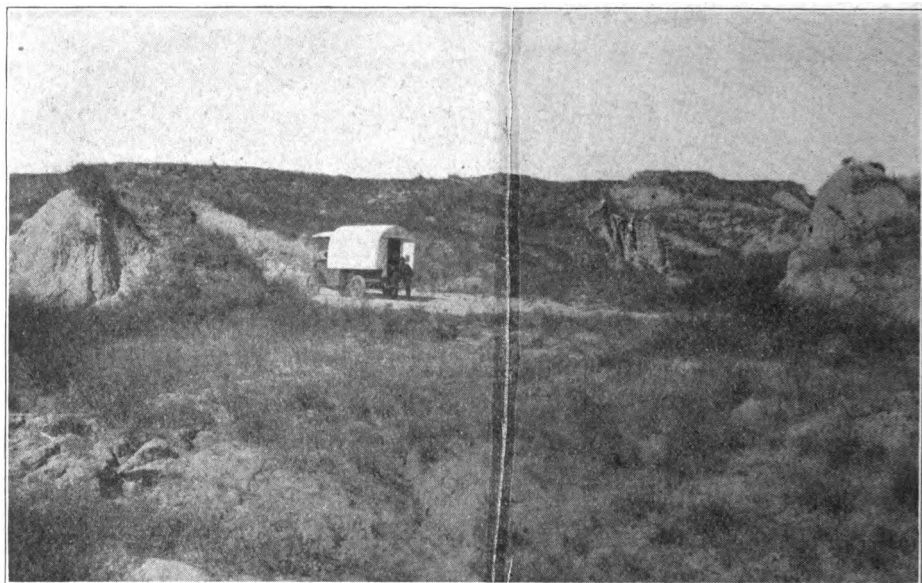
"Well," continued the little fellow, "give me five cents to buy peanuts for the monkey."—Exchange.

### A Cancellation.

A telegraph clerk in an outlying district of the Sudan found the desolation getting the better of his nerves and telegraphed to headquarters: "Can't stay here; am in danger of life; surrounded by lions, elephants and wolves."

The hard-hearted clerk at headquarters wired back: "There are no wolves in the Sudan."

The next day the desolate one replied: "Referring to my wire of the 16th, cancel wolves."



F. C. Nissley, of Norristown, Pa., enroute to the Pacific Coast in his Little Giant Truck.

### I Remember! I Remember!

I remember, I remember,  
 The house where I was born;  
 The little window where the sun  
 Came peeping in at morn.  
 You'd hardly know the old place now,  
 For dad is up to date,  
 And the farm is scientific  
 From the back lot to the gate.

The house and barn are lighted  
 With bright acetylene,  
 The engine in the laundry  
 Is run by gasoline,  
 We have silos, we have motor cars,  
 We have dynamos and things;  
 A telephone for gossip,  
 And a phonograph that sings.

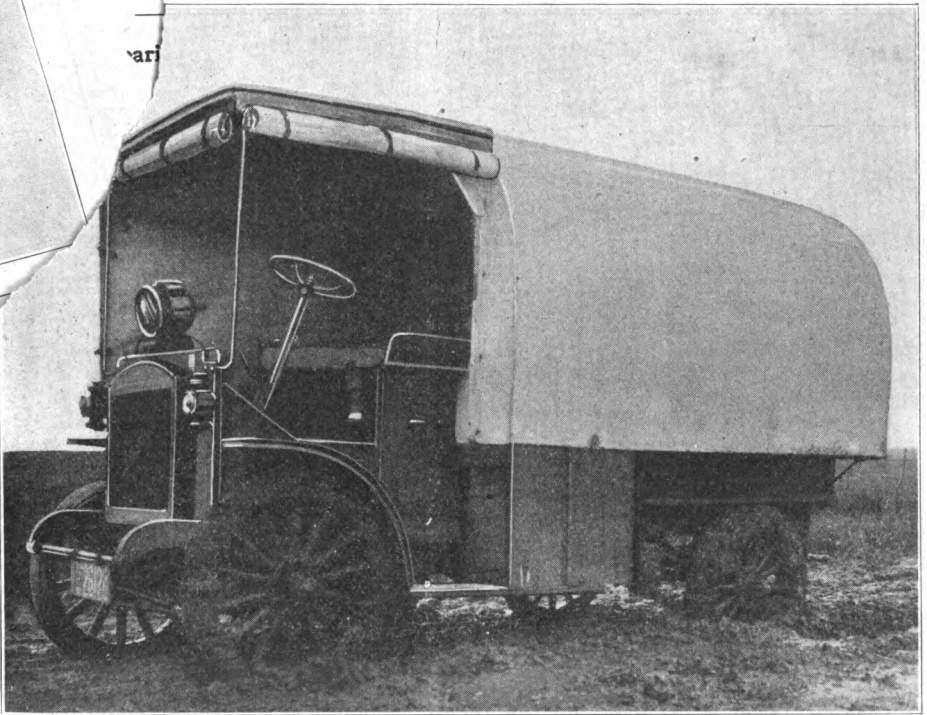
The hired man has left us,  
 We miss his homely face;  
 A lot of college graduates  
 Are working in his place.  
 Machines are doing everything:  
 They plow, they bale our shucks,  
 We bring our produce fresh to town  
 In Little Giant Trucks.

The little window where the sun  
 Came peeping in at morn  
 Now brightens up a bathroom  
 That cost a car of corn.  
 Our milkmaid is pneumatic  
 And she's sanitary, too;  
 But Dad gets 15 cents a quart  
 For milk that once brought 2.

### The Little Giant Promotes Wanderlust.

We are told by learned men that there is a streak of the savage in all of us that finds its greatest expression in a longing to travel—to get out into the wild and woolly places. With the exception of the hoboes and gypsies, most of civilized humanity is obliged to repress its wanderlust, and keep its nose to the grindstone in order to earn a living.

Mr. F. C. Nissley of Norristown, Pa., was afflicted every Spring with an attack of the wanderlust, and last April his desire to travel and to see the Panama Exposition proved too luring for him to resist. He conceived a happy idea, by which he could satisfy his longings and



Close view of Little Giant fitted up as a hotel on wheels, and used by F. C. Nissley on trans-continental trip. Eighteen miles of gumbo between Elm Creek and Kearney, Neb.

at the same time secure a living. His plan was to fit up a truck and travel from town to town, taking pictures of the principal points of interest, such as scenery, school groups, etc., and then show them in the moving-picture houses en route on a commission basis, making his home in the truck.

After considering different makes of trucks he decided that the Little Giant offered the greatest promise of endurance and reliability and purchased one. Mr. Nissley had a special body built, which was equipped with two bunks, a couple of closets, an electric piano and a photographer's outfit. He left Philadelphia last May, traveling West, with one assistant. He found business beyond his expectations and before reaching Franklin, Pa., had hired two more assistants.

According to the last word received from him he had visited San Francisco

and had reached Omaha, Nebr., on his return, having traveled a distance of over 6,000 miles without trouble of any description.

#### Still Waiting.

The self-made man stalked into the office of a great financier with whom he had an appointment.

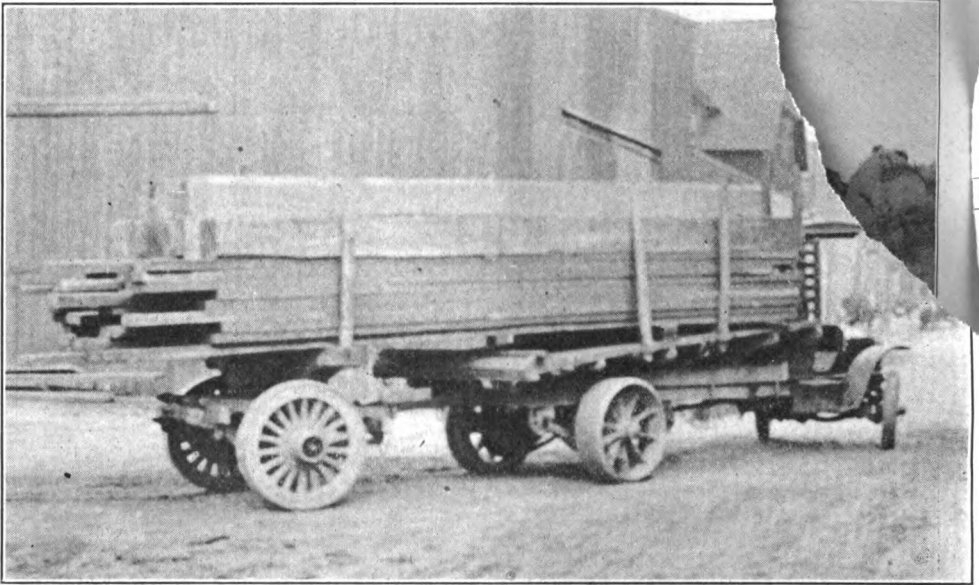
"You probably don't remember me," he began, "but twenty years ago, when I was a poor messenger boy, you gave me a message to carry——"

"Yes, yes!" cried the financier. "Where's the answer?"—Argonaut.

#### Almost Ready.

Jimmie was going out with his mother one afternoon, and had been sent up stairs to get ready. After a considerable wait, the mother called up the stairs: "Hurry up, Jimmie! We're late now. Have you got your shoes on yet?"

"Yes," replied the boy, "all but one."



**Six Wheel Truck in Service of Yellow Pine Company, Brooklyn, N. Y.**

The Yellow Pine Company of Brooklyn, N. Y., have a fleet of six wheel trucks consisting of five ten ton and one seven ton capacity. They state that the cost of delivery of Yellow Pine lumber with these trucks has been 87 cents per thousand feet, as against \$2.28 per thousand feet with horse-drawn vehicles, and \$2.68 per thousand feet with motor trucks before adopting our six-wheel system. The average length of lumber carried was 26 ft., and they have carried 12x12 in. needles 68 ft. in length through the heaviest traffic in New York City.

**Remember the Words, "YOUR BEST."**

"An old man was leading two calves out to early pasture. When he came to the field he tied one calf to one of his boot-straps and the other to the opposite strap while he opened the rickety gate. The calves ran away. When he was picked up, his wife asked him: 'Didn't you know any better than to do such a foolish trick as that?' 'Yes, Ann,' he answered, 'I hadn't been dragged four rods before I saw my mistake.'"

**An Inspiring Model.**

"Little Johnnie owned a couple of bantam hens which laid very small eggs, this fact being displeasing to the youngster. Going to the fowl-run one morning, Johnnie's father was surprised to find a goose egg tied to one of the beams and above it a card with the words: 'Keep your eye on this and do your best.'"

**Wanted to Know.**

An Irishman having just landed in New York got a position on the railroad as flagman at one of the principal crossings. One day came the "20th Century Limited" about 20 minutes late. The Irishman held out his red flag and stopped the express. The engineer jumped off very much angered, and asked the Irishman why he had stopped the train when he knew they were 20 minutes late. The Irishman replied: "That's just what I wanted to know. Where have you fellows been for the last 20 minutes?"

She—"Did you have a fine auto trip?"

He—"I should say so. It was a fine every town we went through."

**ring Again.**

ught a parrot from a to her great disgust ny swear words. To vil habit, she punished on of each offence by ater. In cold weather a ducking, was put o dry. One day some from a duck's tub, the fire. Joey looked

for some minutes and then said, "You d—— little fools, you've been swearing again!"

**Bait.**

A Methodist bishop was a guest at the home of a friend who had two charming daughters. One morning the bishop, accompanied by the young ladies, went out in the hope of catching some trout. An old fisherman, out for the same purpose, wishing to appear friendly, called out:

"Ketchin' many, pard?"

The bishop, drawing himself to his full height, replied, "Brother, I am a fisher of men."

"You've got the right kind of bait, all right," was the fisherman's rejoinder.

**Age.**

A young woman presented a check at a Cedarvale bank last week, the check payable to Gretchen H. Schmidt. Miss Schmidt had indorsed it without the middle initial, and the teller called her attention to it, saying she had forgotten the "H." "Ach, so I haf," she said blushing, and seizing a pen she added "Age 23."

**The Eternal Feminine.**

"I am thirty-five years old," announced a woman of fifty-six at a tea-party.

"And I am twenty-six," said the woman of forty-five. Then, turning to a girl of seventeen who stood near by, she asked, "How old are you, Ethel?"

"Oh," replied Ethel, "according to present reckoning, I'm not born yet."

**Cutting Expenses.**

Father and son went for a stroll one sweltering day recently. As they passed a vendor of ice cream the boy turned to his father and said lovingly:

"I wish you'd puy me some ice cream, fader. I do feel warm."

His father gazed at him for a few seconds in mild surprise, and then exclaimed:

"No, no, Ikey, my poy; but I'll tell you vot I'll do. I'll tell you some ghost stories vot'll make your blood run cold."

**Where a Miss Made a Hit.**

Very proud of his new khaki uniform, he was walking around camp, and went to the butts, where some soldier lads were trying to hit a bull's-eye, but repeatedly missed.

"Here, boys," called out the officer, "I'll show you how to shoot." And he took a rifle and missed. Having a good strain of Irish blood in him, his wits quickly came to his aid, and he smilingly remarked:

"That's how you shoot."

Taking a steadier aim, he fired again, and this time exactly pierced the bull's-eye.

"That," said he, triumphantly, "is the way I shoot."

**Unhappy Reminder.**

"There are some cold biscuit and a slice of ham. I have nothing else cooked."

"Thanks, mum. You're a kind-hearted lady. Kin I set here on de steps an' eat?"

"Oh, yes."

"An' one more favor, mum, before you go. Dere's somebody playin' de phony-graft inside. Would you mind tellin' 'em to stop till I finished me lunch? Cabarets ruined me an' eatin' to rag-time reminds me of de past."

**Are You On?**

Stude—I want my hair cut.

Barber—Any special way?

Stude—Yes; off.

March, 1916





Nothing else is quite so sure as one's finish.

Many a courtship is torpedoed on the sea of matrimony.

If a man has a true sense of humor he knows when not to get funny.

When a man is going down hill he meets a lot of his neighbors going up.

A congenial husband is one who lets her have her own way in everything.

A race may be won by a head, but it's usually the legs that land the coin.

When a man tells a woman a joke he usually has to follow it up with an explanation.

If a man can afford to sit down and wait for a golden opportunity to come along he doesn't need it.

True religion makes a man feel that it is just as cold for his wife to get up and light the fire as it is for himself.

An Ohio couple kept their marriage a secret for six years—and, strange to say, the woman in the case wasn't a mute, at that.

A western man has invented a preparation for restoring old paintings. A preparation for restoring new umbrellas to their owners would be more popular.

High C is best attained by treading on a cat's tail.

Variety is the spice of life to the bald man in the front row.

A mean man always attributes his dislike of his neighbor to envy.

From the bulldog's point of view this is a very quarrelsome old world.

The age of reason depends altogether on the man; some men never attain it.

At a wedding men laugh and women weep—probably because they are not the victims.

Don't get too self-important; the world will go on just the same after you get out.

About the only difference between repartee and impudence is in the size of the man who says it.

To remove superfluous hair send your well filled mattress to be done over by a tricky upholsterer.

If a married man ever becomes truly great his wife nearly always assumes the responsibility for it.

It has been said that the darkest cloud has a silver lining, but the average man prefers his clouds gold lined and of a less somber hue.

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#### Tonsorial Art.

Barber—Poor Jim has been sent to a lunatic asylum.

Victim (in chair)—Who's Jim?

"Jim is my twin brother, sir. Jim has long been broodin' over the hard times, an' I suppose he finally got crazy."

"Is that so?"

"Yes, he and me has worked side by side for years, and we were so alike we couldn't tell each other apart. We both brooded a great deal, too. No money in this business now."

"What's the reason?"

"Prices too low. Unless a customer takes a shampoo it doesn't pay to shave or haircut. Poor Jim, I caught him trying to cut a customer's throat because he refused a shampoo, so I had to have the poor fellow locked up. Makes me sad. Sometimes I feel sorry I didn't let him slash all he wanted to. It might have saved his reason. Shampoo, sir?"

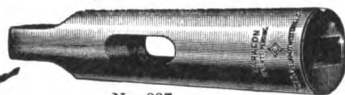
"Yes!"

Johnson—I wonder if Mr. Jones meant anything personal by giving me a ticket to a lecture "On Fools."

Jackson—Why?

Johnson—Because the ticket says, "Admit One."

"He's a director in a bank. 'Go on' that fellow?" "Yes. He tells the people what windows to go to."



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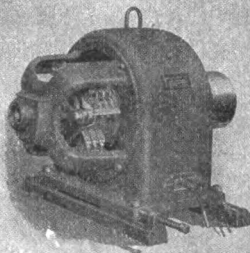
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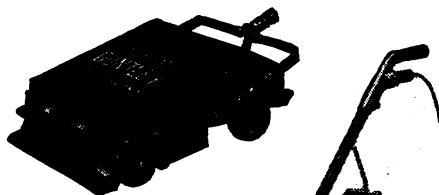
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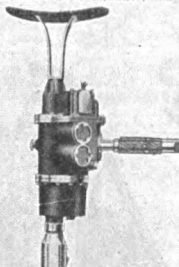
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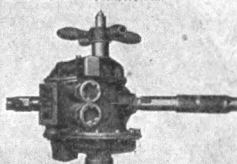
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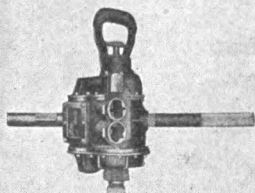
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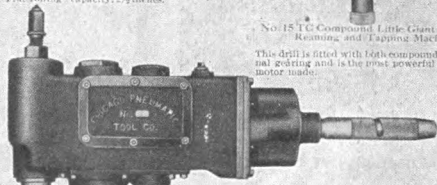
No. 3 Improved Little Giant Drill.  
Two speeds, 100 and 200 RPM. Reversible or non-reversible. Capacity, 1/2 inch.



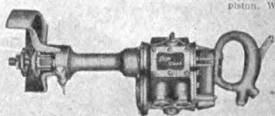
No. 1 Ball Bearing Little Giant Drill.  
Furnished either reversible or non-reversible.  
Capacity, 2 inches.



No. 11 Improved Little Giant Reversible Reaming and Tapping Machine.  
Reaming and tapping—capacity, 2 inches.  
Flare rolling—capacity, 1 1/2 inches.



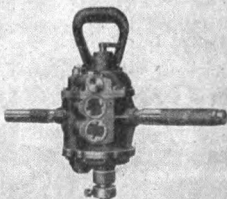
No. 15 T.C. Compound Little Giant Reversible Reaming and Tapping Machine.  
This drill is fitted with 14th compound and internal gearing and is the most powerful pneumatic motor made.



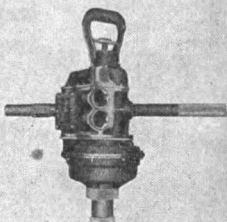
No. 4 Improved Little Giant Grinder.  
For general and heavy work. Speed light, 300 RPM.



No. 10 Little Giant Grinder.  
For light work, speed light, 400 RPM.



Improved Little Giant Reversible Wood Boring Machine.  
Capacity, No. 3—2 inches; No. 15—3 inches.



No. 15 T.C. Compound Little Giant Reversible Reaming and Tapping Machine.  
This drill is fitted with 14th compound and internal gearing and is the most powerful pneumatic motor made.



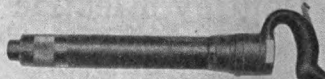
Boyer Riveting Hammer with Chisel.  
The chisel is held in place with a safety sleeve or collar which prevents shooting out of chisel or piston. Well adapted for cutting out rivets.



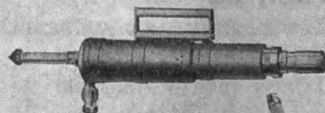
Boyer Chipping and Calking Hammer.  
Made in many sizes and styles to adapt it to a wide range of work.



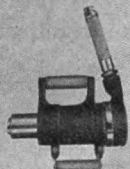
Boyer Riveting Hammer.  
Made in capacities for driving up to 1 1/2 inch rivets.



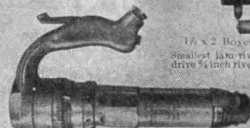
Boyer Hammer Fitted with Safety Device.  
The safety device is furnished when required and effectively prevents the shooting out of piston or rivet set.



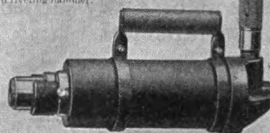
1 1/2 x 6 Boyer Jan Riveter.  
Adapted for a wide range of work.  
Will drive 1 inch rivets in 24 inch space.



1 1/2 x 2 Boyer Jan Riveter.  
Special Jan riveter made. Will drive 3/4 inch rivets in 8 inch space.



Boyer Riveting Hammer with Inverted Handle.  
Adapted for work in close quarters. Same capacity as standard riveting hammer.



Boyer Pneumatic Holder-on.  
For holding up rivets.

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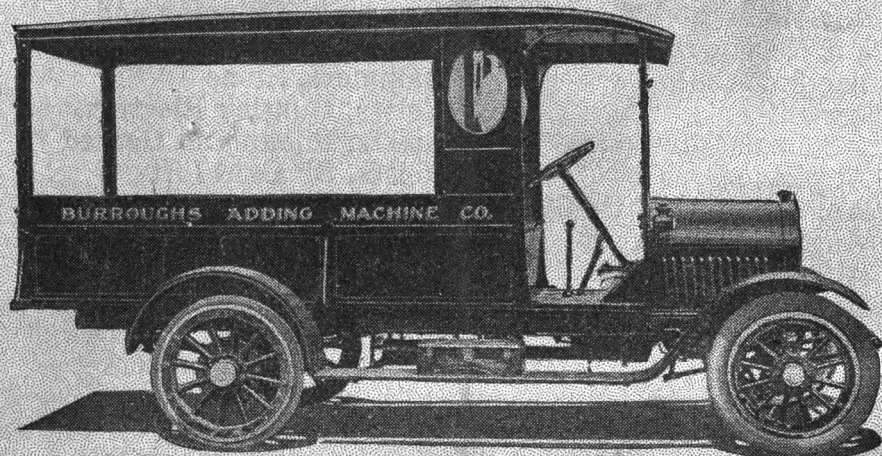
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# WORM DRIVE

## "Little Giant"

### The Truck PLUS



MODEL 15—1500 to 2000-Lb. Worm Drive Little Giant

The Little Giant is the truck of standardized units, each of which has a favorable reputation, with a guarantee and a distinction all its own.

Backing up the prestige of these standardized units is the guarantee of an \$11,000,000 corporation with branches and agencies all over the world and a reputation for high class engineering and manufacturing skill that is second to none.

Little Giant Worm Drive trucks are made in two capacities, 1500 to 2000-lb. (No. 15) and 2-ton (No 16) and are made up of the following standardized units:

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Wright Radiator	Schebler Carburetor	Spicer Universal Joints
Eisemann High Tension Magneto	Special Alloy Pressed Steel Frame	
Chrome Vanadium Steel Springs	Jacox Non-Reversible Steering Gear	

These with the Model "H" Chain Drive Little Giants in 1 and 1½-ton capacities, give us a complete range of sizes up to two tons.

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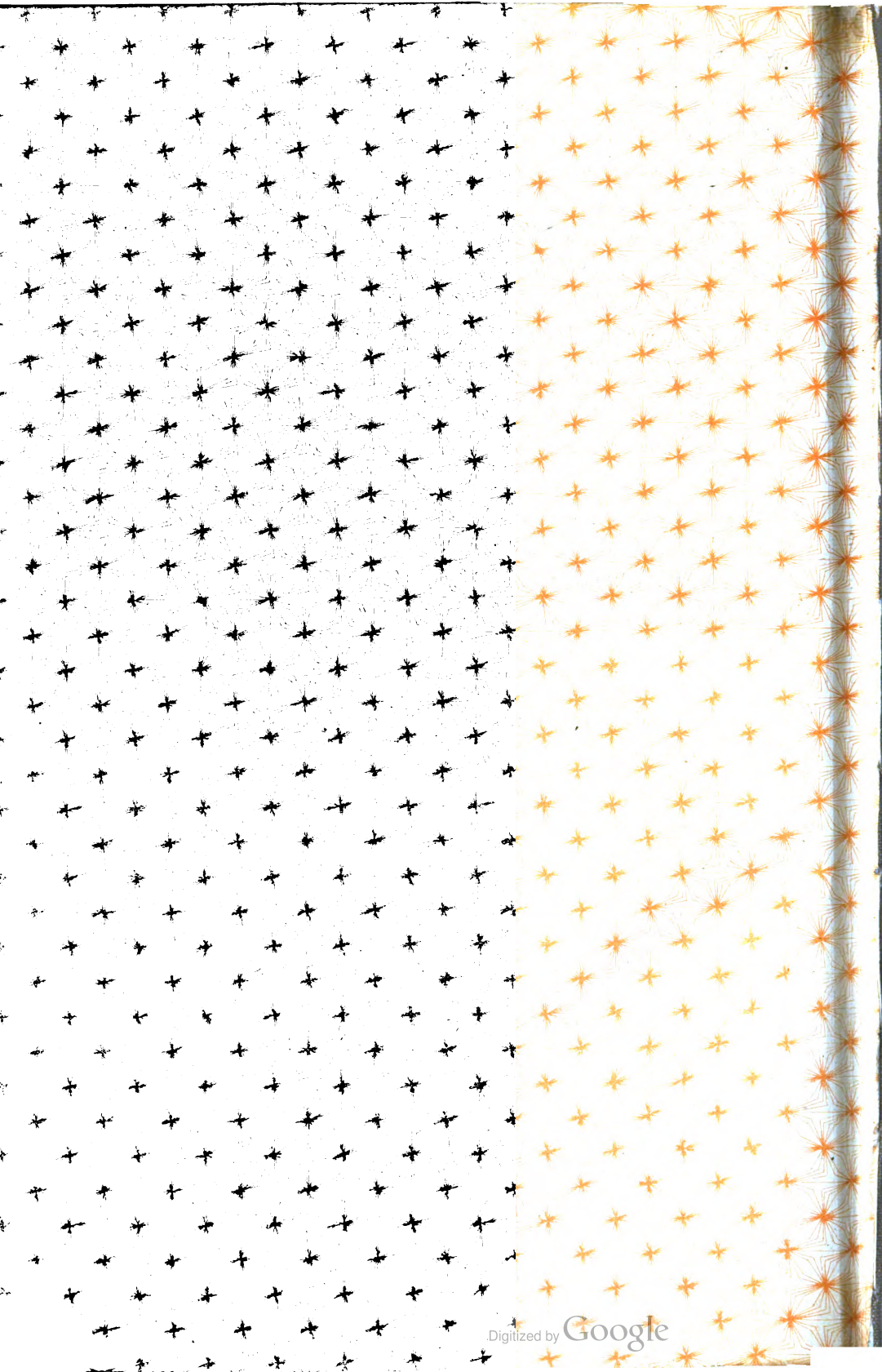
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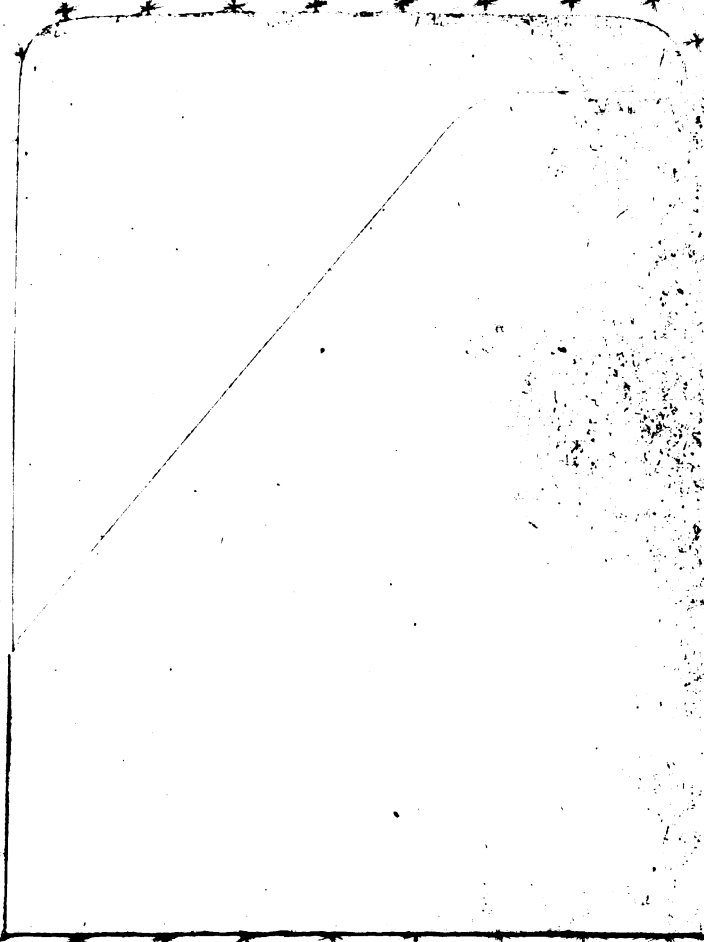
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